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REKOMENDASI PERSETUJUAN ETIK

 <p style="font-size: small; margin: 0;">KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN KOMITE ETIK PENELITIAN KESEHATAN RSPTN UNIVERSITAS HASANUDDIN RSUP Dr. WAHIDIN SUDIROHUSODO MAKASSAR Sekretariat : Lantai 2 Gedung Laboratorium Terpadu JL.PERINTIS KEMERDEKAAN KAMPUS TAMALANREA KM.10 MAKASSAR 90245. Contact Person: dr. Agusalin Bukhari, M.Med,Ph.D., Sp.GK. TELP. 08124820838, 0411 5780163, Fax : 0411-581421</p>			
<p>REKOMENDASI PERSETUJUAN ETIK Nomor : 1156/UN4.6.4.5.31/PP36/2019</p>			
Tanggal: 29 Nopember 2019			
<p>Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan Dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :</p>			
No Protokol	UH19100919	No Sponsor Protokol	
Peneliti Utama	Rosnah, STP, MPH	Sponsor	
Judul Peneliti	Efek Pemberian Kalsium dan Ekstrak Cangkang Telur Ayam Ras Terhadap Profil Lipid (Kolesterol Total, Trigliserida, LDL,HDL) Vitamin D, Kalsium Serum dan Penurunan Berat Badan Tikus Galur Wistar jantan Obesitas		
No Versi Protokol	1	Tanggal Versi	30 Oktober 2019
No Versi PSP		Tanggal Versi	
Tempat Penelitian	Laboratorium Animal dan Laboratorium Biomolekuler dan Immunologi Fakultas Kedokteran UH, Laboratorium Fak. Peternakan UH, dan Balai Besar Laboratorium Kesehatan Makassar		
Jenis Review	<input type="checkbox"/> Exempted <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Fullboard Tanggal	Masa Berlaku 29 Nopember 2019 sampai 29 Nopember 2020	Frekuensi review lanjutan
Ketua Komisi Etik Penelitian Kesehatan FKUH	Nama Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K)	Tanda tangan	
Sekretaris Komisi Etik Penelitian Kesehatan FKUH	Nama dr. Agusalin Bukhari, M.Med.,Ph.D.,Sp.GK (K)	Tanda tangan	
<p>Kewajiban Peneliti Utama:</p> <ul style="list-style-type: none"> Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan Menyerahkan Laporan SAE ke Komisi Etik dalam 24 jam dan dilengkapi dalam 7 hari dan Laporan SUSAR dalam 72 jam setelah Peneliti Utama menerima laporan Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah Menyerahkan laporan akhir setelah Penelitian berakhir Melaporkan penyimpangan dari protokol yang disetujui (protocol deviation / violation) Menatuhi semua peraturan yang ditentukan 			

Lampiran 2. PENYIAPAN SIMPLISIA CANGKANG TELUR AYAM RAS



1



2



3



4



5



6



7



8



9

Keterangan gambar tahap pembuatan simplisia cangkang telur ayam ras

1. Pencucian cangkang telur ayam ras lalu dibilas aquadest.
2. Perebusan selama 15 menit
3. Penirisan cangkang telur ayam ras rebus
4. Pengeringan semalam dengan cara diangin-anginkan
5. Pengeringan di oven, suhu 200°C selama 10 menit
6. Pendinginan pada suhu ruang
7. Penepungan menggunakan blender
8. Penyaringan
9. Simplisia serbuk cangkang telur ayam ras

Lampiran 3. PEMBUATAN EKSTRAK CANGKANG TELUR AYAM RAS

		
<p>1</p>	<p>2</p>	<p>3</p>
		
<p>4</p>	<p>5</p>	<p>6</p>
		
<p>7</p>	<p>8</p>	<p>9</p>

Keterangan gambar tahap ekstraksi cangkang telur ayam ras

1. Pembuatan larutan HCl 4%
2. Proses maserasi
3. Proses penyaringan
4. Maserat cangkang telur ayam ras
5. Pengeringan maserat
6. Penepungan maserat
7. Penyaringan maserat
8. Ekstrak cangkang telur ayam ras
9. Pengemasan ekstrak

Pemberian ekstrak cangkang telur ayam ras pada hewan coba

Pemberian ekstrak cangkang telur ayam ras pada tikus dosis 9 mg /200 g BB dan 21,6 mg /200 g BB berbentuk suspensi masing-masing dalam larutan aquades 2 ml. Frekwensi pemberian sekali sehari sebelum makan dengan mencekok menggunakan sonde.

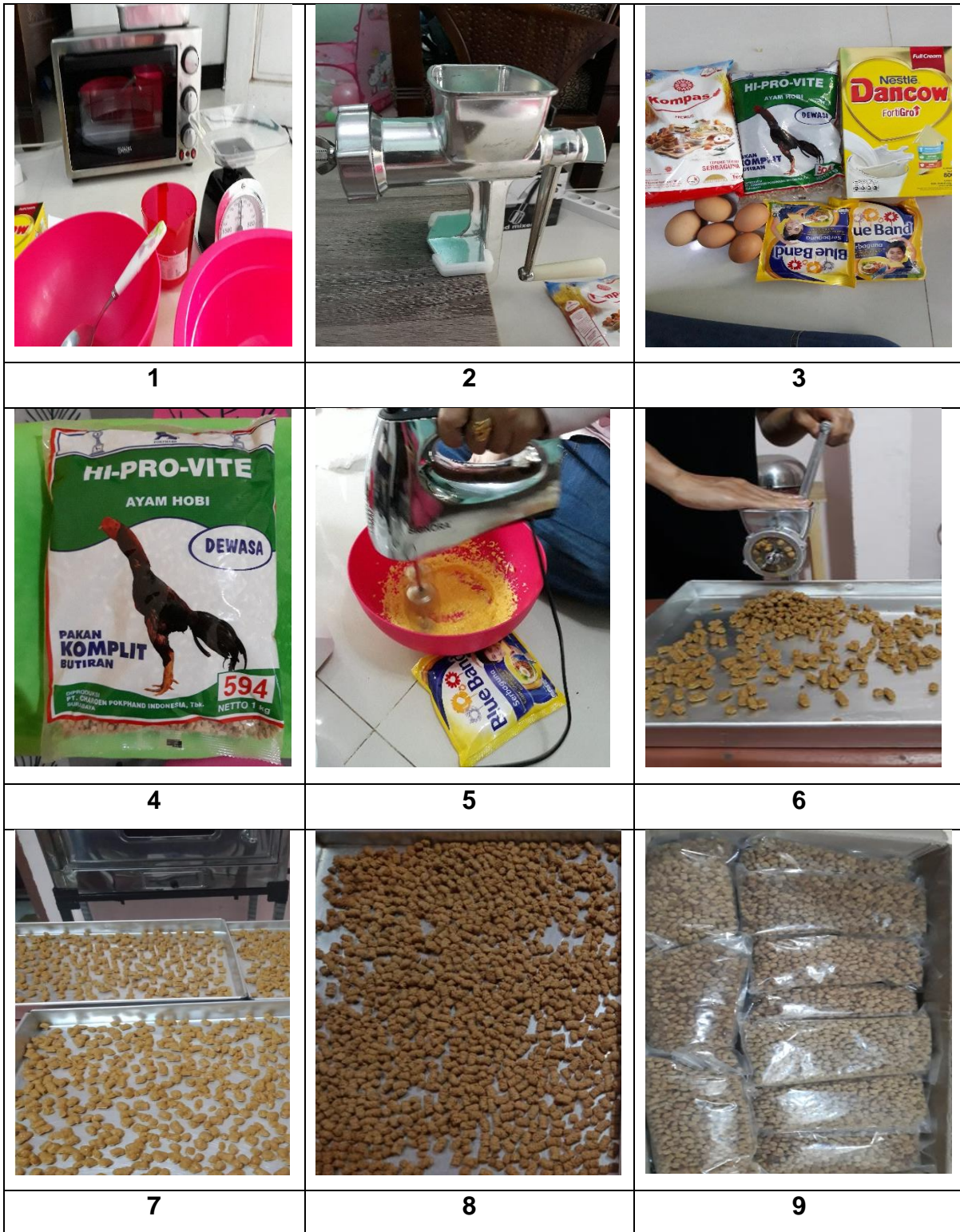


Pembuatan suspensi tersebut menggunakan peralatan neraca analitik, spatula, cawan porselen, lumpang dan mortar, spuit 3 cc (One med), kanula/sonde per oral, labu ukur, dan gelas piala.

**Lampiran 4. HASIL ANALISA KOMPOSISI KIMIA EKSTRAK CANGKANG
TELUR AYAM RAS**

No. Lab	Kode Sampel	PENGUJIAN				
		Kadar Air (%)	Total Abu (%)	Fospor (%)	CaCO ₃ (%)	Kalsium (%)
19009217	Direndam CH ₃ COOH 2 N	0,83	77,74	0,5029	94,3228	29,2603
19009218	Direndam CH ₃ COOH 2 N	0,70	79,66	0,6088	97,2187	28,4709
19009219	Direndam CH ₃ COOH 2 N	0,71	80,15	0,4463	92,7220	24,4952
19009220	Direndam HCl 4%	0,52	85,77	0,6478	94,5269	35,4071
19009221	Direndam HCl 4%	0,58	86,75	0,6054	95,2774	33,4436
19009222	Direndam HCl 4%	0,64	86,92	0,5667	96,8135	37,5156

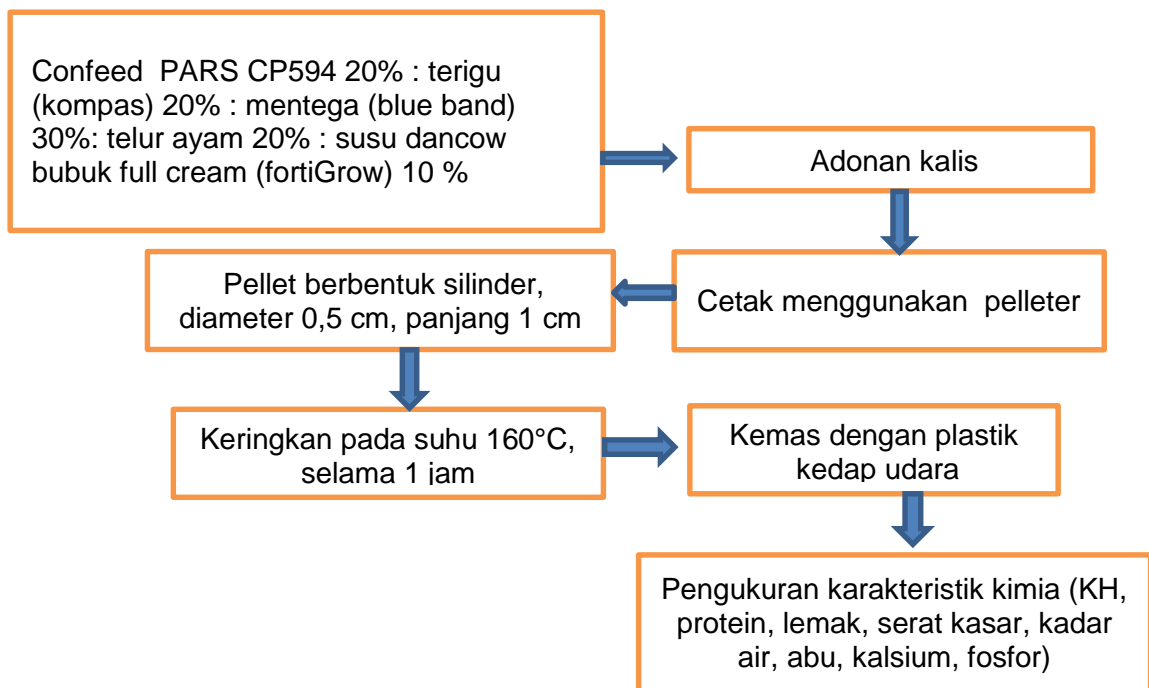
Lampiran 5. PEMBUATAN PELLET PAKAN TIKUS TINGGI LEMAK (HFD)



Keterangan gambar

1. Persiapan alat
2. Alat pelleter
3. Persiapan bahan pembuatan pellet HFD
4. Pakan standar
5. Pencampuran bahan
6. Pencetakan pellet HFD
7. Pellet HFD mentah
8. Pellet HFD matang
9. Pellet HFD kemasan

Diagram Alir Pembuatan Pakan Diet Tinggi Lemak (HFD)



Gambar 21. Diagram Alir Pembuatan Pakan Diet Tinggi Lemak (HFD)

Lampiran 6. HASIL ANALISA KOMPOSISI KIMIA PELLET PAKAN TIKUS TINGGI LEMAK (HFD)



LABORATORIUM KIMIA MAKANAN TERNAK
JURUSAN NUTRISI DAN MAKANAN TERNAK
FAKULTAS PETERNAKAN
UNIVERSITAS HASANUDDIN

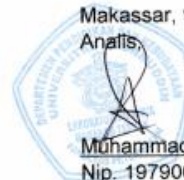
HASIL ANALISIS BAHAN

No	Kode Sampel	KOMPOSISI (%)							
		Air	Protein Kasar	Lemak Kasar	Serat kasar	BETN	Abu	Ca	P
1	F1.1	8,49	19,54	22,43	6,38	45,66	5,99	0,85	0,17
2	F1.2	8,45	19,59	22,66	6,29	45,29	6,16	0,85	0,16
3	F2.1	7,94	19,37	25,55	5,27	44,49	5,32	0,82	0,15
4	F2.2	7,80	19,36	25,32	5,34	44,52	5,46	0,83	0,14

Keterangan : 1. Kecuali Air, Semua Fraksi Dinyatakan Dalam Bahan Kering
2. BETN = Bahan Ekstrak Tanpa Nitrogen

Makassar, 9 September 2019

Analisis,



Muhammad Syahrul

Nip. 19790603 2001 12 1 001

Lampiran 7. PEMELIHARAAN HEWAN COBA

Masa adaptasi



Keterangan gambar :

- KN : Kontrol Negatif
- KP : Kontrol Positif
- ECTA I : Pemberian Ekstrak Cangkang Telur Ayam dosis I
- ECTA II : Pemberian Ekstrak Cangkang Telur Ayam dosis II

Bulan ke-1



KN



KP



PECTA I



PECTA II

Bulan ke-2



KN



KP



ECTA I



ECTA II

Bulan ke-3



KN



KP



ECTA I



ECTA II

Bulan ke-4



KN



KP



ECTA I



ECTA II

Pemberian ekstrak cangkang telur ayam menggunakan sonde



Penimbangan Berat Badan Tikus



Pengukuran Nasoanal



Serum darah tikus



Lampiran 8. MASTER TABEL BERAT BADAN TIKUS (GRAM)

	AWAL	ADAP.																
Kelompok	0	0	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
(KN)	154	158	165	171	175	180	186	189	193	196	217	219	223	226	229	232	235	241
	158	163	170	174	179	187	190	193	198	200	224	227	229	233	238	240	243	245
	159	162	168	176	183	185	192	194	197	201	221	226	226	229	233	236	239	246
	160	165	171	172	176	184	188	194	198	199	222	227	231	236	237	239	240	244
	155	161	167	172	177	183	187	190	193	197	216	224	228	232	239	243	247	241
	153	163	169	174	182	184	189	192	195	200	224	229	231	237	239	241	243	244
	156	162	167	169	177	182	185	186	192	193	216	220	226	231	235	237	238	240
Rerata	156.4	162.0	168.1	172.6	178.4	183.6	188.1	191.1	195.1	198.0	220.0	224.6	227.7	232.0	235.7	238.3	240.7	243.0
(KP)	153	157	168	183	198	209	224	237	252	268	275	274	284	291	299	306	314	325
	161	164	176	194	206	221	232	248	263	277	274	283	293	300	308	312	323	332
	158	161	173	187	200	217	230	241	260	273	277	279	289	294	304	311	319	329
	157	161	172	195	202	214	227	244	259	271	279	279	288	295	303	312	317	330
	164	168	179	194	207	221	236	249	264	280	293	285	296	301	310	316	325	333
	162	167	178	193	204	219	234	247	262	278	279	283	290	302	308	314	323	334
	163	166	176	191	210	220	235	248	263	277	279	284	294	301	309	315	324	333
Rerata	159.7	163.4	174.6	191.0	203.9	217.3	231.1	244.9	260.4	274.9	279.4	281.0	290.6	297.7	305.9	312.3	320.7	330.9
ECTA 1	153	160	168	185	197	211	225	233	247	265	273	279	289	295	301	307	310	312
	159	165	175	190	205	219	230	235	253	270	276	281	294	301	306	310	315	317
	152	158	167	183	198	207	225	239	247	263	267	273	287	295	299	305	308	310
	156	164	173	185	202	214	229	234	252	269	276	280	293	299	305	311	315	316
	158	162	170	188	201	215	228	236	253	268	272	278	295	298	304	310	313	315
	169	174	183	199	211	224	239	244	261	279	285	291	301	309	315	321	324	326
	158	163	174	188	201	211	228	238	249	268	274	280	289	298	304	310	313	315
Rerata	157.9	163.7	172.9	188.3	202.1	214.4	229.1	237.0	251.7	268.9	274.7	280.3	292.6	299.3	304.9	310.6	314.0	315.9
ECTA 2	158	165	173	188	202	214	229	240	254	271	275	278	283	287	291	295	298	303
	157	163	172	190	201	214	228	237	253	270	274	278	282	286	290	294	297	302

	160	166	175	190	204	218	231	238	256	273	277	281	285	289	293	297	300	305
	161	166	175	191	205	219	232	240	257	274	278	282	286	292	296	298	302	306
	158	163	174	189	202	214	229	239	254	271	275	279	283	287	292	295	298	303
	161	167	176	192	205	218	232	240	257	274	278	282	286	290	294	298	302	306
	158	165	173	189	202	215	229	236	254	271	275	279	283	287	291	295	298	303
Rerata	159	165	174	189.9	203	216	230	238.6	255	272	276	279.9	284	288.3	292.4	296	299.3	304

MASTER TABEL PANJANG BADAN TIKUS WISTAR (cm)

Kelompok	SAMPEL			I	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI	XII	XIII	XIV	XV	X	
		AWAL	ADAPTASI	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	
(KN)	1	17.2	17.3	17.5	17.7	17.9	18.1	18.4	18.6	18.9	19.1	19.3	19.6	19.8	20.1	20.3	20.6	20.8	21	
	2	18.1	18.2	18.4	18.6	18.8	19	19.3	19.5	19.8	20	20.2	20.5	20.7	21	21.2	21.5	21.7	22	
	3	17.8	17.9	18.1	18.3	18.5	18.7	19	19.2	19.5	19.7	19.9	20.2	20.4	20.7	20.9	21.2	21.4	21.7	22
	4	18.9	19	19.2	19.4	19.6	19.8	20.1	20.3	20.6	20.8	21	21.3	21.5	21.8	22	22.3	22.5	22.8	23
	5	18.2	18.3	18.5	18.7	18.9	19.1	19.4	19.6	19.9	20.1	20.3	20.6	20.8	21.1	21.3	21.6	21.8	22.1	22.3
	6	18.3	18.4	18.6	18.8	19	19.2	19.5	19.7	20	20.2	20.4	20.7	20.9	21.2	21.4	21.7	21.9	22.2	22.4
	7	18.6	18.7	18.9	19.1	19.3	19.5	19.8	20	20.3	20.5	20.7	21	21.2	21.5	21.7	22	22.2	22.4	22.6
(KP)	8	18,1	18.2	18.3	18.5	18.7	19,1	19.2	19.4	19.6	19.9	20.2	20.5	20.8	21	21.2	21.4	21.6	21.8	
	9	18.2	18.4	18.5	18.6	18.8	19.1	19.3	19.5	19.7	19.9	20.2	20.4	20.7	20.9	21	21.3	21.5	21.7	21.9
	10	18.3	18.5	18.7	18.9	19.1	19.3	19.5	19.7	20	20.3	20.5	20.7	20.8	21	21.3	21.5	21.6	21.7	21.8
	11	17.9	18.1	18.3	18.6	18.7	19.1	19.3	19.5	19.8	20.1	20.4	20.8	21.1	21.2	21.4	21.6	21.8	22	22.2
	12	18.1	18.2	18.5	18.7	18.9	19.2	19.4	19.5	19.6	19.7	20	20.5	21	21,3	21.5	21.7	21.8	21.9	22
	13	17.8	18.1	18.3	18.5	18.7	19	19.2	19.5	19.6	20	20.3	20.6	20.8	21	21.2	21.3	21.5	21.6	21.7
	14	18.2	18.4	18.5	18.7	19	19.3	19.5	19.7	19.9	20.2	20.5	21	21.4	21.6	21.8	22	22.4	22.6	22.8
ECTA 1	15	17.8	17.9	18.1	18.2	18.4	18.6	18.7	19	19.1	19.4	19.7	19.9	20.3	20.5	20.7	21	21.3	21.5	21.7
	16	17.9	18	18.2	18.4	18.5	18.7	18.8	19.1	19.2	19.5	19.8	20	20.4	20.6	20.8	21.1	21.4	21.6	21.8
	17	18	18.1	18.3	18.4	18.6	18.7	18.9	19.2	19.3	19.6	19.9	20.1	20.5	20.7	20.9	21.2	21.5	21.7	21.9
	18	18.3	18.4	18.4	18.6	18.7	18.9	19.2	19.5	19.6	19.9	20.2	20.4	20.8	21	21.2	21.5	21.8	22	22.2
	19	17.7	17.8	18.1	18.1	18.1	18.3	18.6	18.9	19	19.3	19.6	19.8	20.2	20.4	20.6	20.9	21.2	21.4	21.6
	20	17.7	17.8	17.9	17.9	18.0	18.3	18.6	18.9	19	19.3	19.6	19.8	20.2	20.4	20.6	20.9	21.2	21.4	21.6
	21	17.4	17.5	17.8	18	18.0	18.2	18.3	18.6	18.7	19	19.3	19.5	19.9	20.1	20.3	20.6	20.9	21.1	21.3
ECTA 2	22	18.4	18.5	18.6	18.7	18.9	19	19.2	19.5	19.6	19.9	20.2	20.4	20.8	21	21.2	21.5	21.8	22	22.2
	23	17.6	17.7	17.8	17.9	18.1	18.2	18.4	18.7	18.8	19.1	19.4	19.6	20	20.2	20.4	20.7	21	21.2	21.4
	24	17.6	17.7	17.8	17.9	18.1	18.2	18.4	18.7	18.8	19.1	19.4	19.6	20	20.2	20.4	20.7	21	21.2	21.4
	25	17.3	17.4	17.5	17.6	17.8	17.9	18.1	18.4	18.5	18.8	19.1	19.3	19.7	19.9	20.1	20.4	20.7	20.9	21.1
	26	18.6	18.7	18.8	18.9	19.1	19.2	19.4	19.7	19.8	20.1	20.4	20.6	21	21.2	21.4	21.7	22	22.2	22.4
	27	17.5	17.6	17.7	17.8	18.0	18.1	18.3	18.6	18.7	19	19.3	19.5	19.9	20.1	20.3	20.6	20.9	21.1	21.3

	28	17.5	17.6	17.7	17.7	17.9	18	18.3	18.6	18.8	19.1	19.4	19.6	20	20.2	20.4	20.7	21	21
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LAMPIRAN 10. MASTER TABEL INDEKS MASSA TUBUH HEWAN COBA (gcm⁻²)

Kelompok	I	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI	XII	XIII	XIV	XV	XVI
KN	0.53	0.55	0.55	0.55	0.55	0.55	0.54	0.54	0.54	0.52	0.54	0.54	0.54	0.53	0.53	0.54
	0.5	0.5	0.51	0.52	0.51	0.51	0.51	0.5	0.5	0.49	0.5	0.5	0.5	0.5	0.5	0.51
	0.51	0.53	0.53	0.53	0.53	0.53	0.52	0.52	0.52	0.5	0.52	0.52	0.52	0.51	0.51	0.52
	0.46	0.46	0.46	0.47	0.47	0.47	0.46	0.46	0.46	0.45	0.47	0.46	0.46	0.46	0.46	0.47
	0.48	0.49	0.5	0.5	0.5	0.49	0.49	0.49	0.49	0.48	0.49	0.49	0.49	0.48	0.49	0.49
	0.48	0.49	0.5	0.5	0.49	0.49	0.49	0.49	0.49	0.48	0.49	0.49	0.49	0.48	0.49	0.5
	0.46	0.46	0.47	0.48	0.47	0.47	0.46	0.46	0.46	0.45	0.47	0.47	0.47	0.46	0.46	0.47
KP	0.47	0.6	0.62	0.62	0.65	0.68	0.7	0.68	0.72	0.7	0.74	0.73	0.74	0.71	0.69	0.68
	0.48	0.57	0.58	0.59	0.6	0.64	0.66	0.7	0.67	0.65	0.69	0.68	0.69	0.67	0.7	0.7
	0.47	0.57	0.59	0.61	0.62	0.65	0.68	0.66	0.69	0.67	0.71	0.7	0.71	0.69	0.7	0.7
	0.49	0.56	0.56	0.57	0.58	0.62	0.64	0.67	0.66	0.64	0.67	0.67	0.67	0.67	0.69	0.68
	0.51	0.56	0.58	0.59	0.61	0.64	0.65	0.72	0.67	0.65	0.69	0.68	0.69	0.68	0.69	0.68
	0.51	0.56	0.57	0.58	0.6	0.63	0.65	0.7	0.67	0.65	0.68	0.68	0.68	0.68	0.71	0.71
	0.49	0.59	0.62	0.62	0.64	0.67	0.69	0.68	0.71	0.69	0.72	0.72	0.73	0.72	0.67	0.66
ECTA I	0.5	0.61	0.62	0.64	0.66	0.67	0.67	0.7	0.68	0.66	0.66	0.65	0.64	0.67	0.68	0.67
	0.51	0.62	0.64	0.65	0.66	0.67	0.69	0.71	0.69	0.66	0.67	0.65	0.65	0.66	0.67	0.68
	0.48	0.59	0.61	0.61	0.64	0.64	0.66	0.68	0.66	0.64	0.64	0.64	0.63	0.63	0.65	0.66
	0.48	0.59	0.61	0.61	0.63	0.64	0.65	0.68	0.66	0.64	0.64	0.63	0.62	0.65	0.66	0.65
	0.51	0.63	0.65	0.66	0.67	0.68	0.7	0.72	0.69	0.67	0.68	0.67	0.66	0.65	0.65	0.69
	0.55	0.67	0.68	0.69	0.71	0.72	0.72	0.75	0.73	0.71	0.71	0.69	0.68	0.67	0.68	0.71
	0.53	0.65	0.67	0.68	0.7	0.71	0.71	0.74	0.71	0.69	0.7	0.69	0.68	0.66	0.67	0.71
ECTA II	0.48	0.56	0.58	0.58	0.61	0.61	0.63	0.68	0.62	0.61	0.6	0.59	0.58	0.65	0.66	0.63
	0.52	0.62	0.63	0.64	0.66	0.67	0.68	0.74	0.68	0.66	0.65	0.64	0.63	0.61	0.62	0.67
	0.53	0.62	0.64	0.65	0.67	0.68	0.69	0.75	0.68	0.66	0.65	0.64	0.64	0.62	0.62	0.68

	0.55	0.65	0.67	0.68	0.69	0.71	0.71	0.78	0.71	0.69	0.68	0.66	0.65	0.62	0.63	0.7
	0.47	0.55	0.57	0.57	0.59	0.59	0.61	0.67	0.61	0.59	0.59	0.58	0.57	0.65	0.66	0.61
	0.54	0.64	0.65	0.66	0.68	0.69	0.7	0.76	0.7	0.67	0.67	0.65	0.64	0.64	0.64	0.69
	0.53	0.6	0.62	0.63	0.65	0.66	0.67	0.74	0.67	0.65	0.63	0.62	0.62	0.61	0.62	0.67

MASTER TABEL RERATA JUMLAH KONSUMSI PAKAN TIKUS PER MINGGU (g)

Kelompok	I	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI	XII	XIII	XIV	XV	XVI
(KN)	22.4	19.92	23.0	22.3	21.1	22.8	21.2	21.9	24.8	22.0	21.8	22.6	22.0	22.8	22.3	22.6
	21.5	20.1	22.3	21.2	21.7	23.0	21.1	21.6	24.8	23.5	22.8	23.9	22.8	23.7	23.2	21.7
	21.2	21.8	23.1	22.4	21.9	21.4	22.8	21.5	23.5	22.6	21.9	24.0	22.4	23.6	22.9	22.5
	22.2	20.9	22.3	23.4	22.2	23.8	20.9	21.2	24.6	24.6	23.5	23.3	21.9	23.9	24.0	22.6
	21.6	22.2	23.4	23.2	21.9	21.0	22.1	23.0	25.8	22.1	22.9	24.1	22.4	23.1	23.3	23.3
	21.7	21.3	23.0	21.2	23.0	23.2	23.3	23.0	24.7	22.2	22.6	23.4	21.6	24.9	23.4	21.6
	22.0	20.5	22.8	21.3	21.7	23.6	22.6	22.5	25.4	24.5	22.7	23.6	21.0	23.5	23.7	22.1
(KP)	22.9	24.1	24.5	24.6	22.6	24.1	22.5	22.9	20.4	21.7	23.9	24.2	23.8	22.7	21.9	22.4
	21.9	25.1	24.6	24.7	24.3	25.7	23.5	23.9	21.4	22.7	24.3	24.3	24.6	23.4	22.9	23.2
	24.0	25.0	22.9	24.3	24.9	24.7	24.1	23.5	21.0	22.1	24.0	23.8	25.3	23.3	22.2	24.8
	25.0	26.2	21.7	23.7	22.4	25.0	23.6	24.0	21.5	23.0	25.2	23.3	24.5	23.6	23.0	24.5
	24.4	23.9	24.3	23.2	22.0	26.1	24.6	24.0	21.5	22.7	25.3	23.8	22.6	22.9	23.0	23.5
	23.2	22.2	23.6	21.4	22.0	23.7	22.6	24.0	21.5	23.4	25.3	24.5	22.6	24.2	23.8	23.8
	24.4	23.3	23.1	21.7	23.2	24.8	22.1	23.4	20.9	21.6	24.9	23.7	25.9	24.2	22.6	22.7
ECTA 1	23.4	23.0	24.8	23.1	24.4	23.5	24.4	22.1	24.3	22.6	23.8	22.2	22.3	21.6	21.8	23.7
	23.2	23.6	24.8	24.0	25.3	23.6	25.0	24.0	25.2	23.7	23.8	23.2	23.2	21.7	21.9	23.2
	23.3	25.2	23.1	21.6	24.7	23.6	25.6	23.3	24.7	24.7	24.0	22.0	22.3	21.8	22.0	22.3
	23.9	23.6	23.4	22.2	25.7	24.0	23.1	23.7	24.7	22.1	23.3	22.4	21.8	22.1	22.3	22.6
	23.5	23.0	24.7	22.9	24.8	24.4	23.5	23.9	24.7	22.5	23.8	24.1	21.2	21.4	21.7	22.8
	23.6	20.9	25.8	24.6	25.6	24.0	24.5	23.9	24.2	22.5	23.8	23.0	22.9	21.5	21.7	24.4
	23.6	21.4	24.6	23.3	24.8	23.6	24.6	26.7	23.9	20.2	24.4	22.7	22.8	21.2	21.4	22.8
ECTA 2	23.8	23.9	24.75	24.7	24.5	24.3	23.9	24.1	25.2	24.5	24.3	23.2	23.5	22.8	23.5	23.4
	24.2	23.9	25.09	23.7	26.1	24.1	24.2	23.8	24.8	24.7	23.9	22.9	23.5	22.0	22.2	22.4

	22.9	23.1	23.95	22.1	25.7	24.8	23.6	23.5	24.6	25.3	24.1	22.2	23.7	22.0	22.4	23.5
	23.8	23.2	25.52	24.3	23.3	24.2	24.7	24.9	24.1	24.8	25.0	22.7	23.2	21.7	21.9	22.2
	25.0	22.9	24.71	23.1	24.0	25.4	24.2	24.2	25.4	23.7	23.3	22.1	23.7	23.0	23.2	23.5
	24.8	22.1	24.88	24.8	25.5	23.4	23.0	23.2	24.3	23.6	24.2	21.3	24.3	21.9	22.1	22.7
	23.1	22.6	24.64	23.3	24.2	23.5	23.1	24.4	25.0	20.8	24.1	22.5	23.6	22.2	22.4	22.7

LAMPIRAN 12. HASIL UJI STATISTIK PARAMETER ANTROPOMETRI TIKUS WISTAR (MINGGU AWAL, 8, 16)

1. HASIL UJI ONE WAY ANOVA PARAMETER ANTROPOMETRI TIKUS WISTAR (MINGGU AWAL, 8, 16)

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
Panjang badan awal (cm)	1	7	18.257	.5503	.2080	17.748	18.766	17.3	19.0
	2	7	18.271	.1604	.0606	18.123	18.420	18.1	18.5
	3	7	17.929	.2812	.1063	17.669	18.189	17.5	18.4
	4	7	17.886	.5014	.1895	17.422	18.349	17.4	18.7
	Total	28	18.086	.4240	.0801	17.921	18.250	17.3	19.0
Panjang badan minggu ke-8 (cm)	1	7	20.057	.5503	.2080	19.548	20.566	19.1	20.8
	2	7	20.014	.2035	.0769	19.826	20.203	19.7	20.3
	3	7	19.429	.2812	.1063	19.169	19.689	19.0	19.9
	4	7	19.300	.4933	.1864	18.844	19.756	18.8	20.1
	Total	28	19.700	.5171	.0977	19.499	19.901	18.8	20.8
Panjang badan mngg16 (cm)	1	7	22.057	.5503	.2080	21.548	22.566	21.1	22.8
	2	7	21.943	.2878	.1088	21.677	22.209	21.7	22.5
	3	7	21.529	.2812	.1063	21.269	21.789	21.1	22.0
	4	7	21.400	.4933	.1864	20.944	21.856	20.9	22.2
	Total	28	21.732	.4854	.0917	21.544	21.920	20.9	22.8
Berat badan awal (g)	1	7	162.29	2.498	.944	159.98	164.60	158	166
	2	7	163.43	3.952	1.494	159.77	167.08	157	168
	3	7	163.86	5.080	1.920	159.16	168.56	158	174
	4	7	165.00	1.732	.655	163.40	166.60	163	167
	Total	28	163.64	3.498	.661	162.29	165.00	157	174
Berat badan minggu ke-8 (g)	1	7	198.00	2.828	1.069	195.38	200.62	193	201
	2	7	274.86	4.298	1.625	270.88	278.83	268	280
	3	7	268.86	5.080	1.920	264.16	273.56	263	279
	4	7	272.00	1.633	.617	270.49	273.51	270	274
	Total	28	253.43	32.847	6.207	240.69	266.17	193	280

Berat badan minggi ke-16	1	7	243.00	2.309	.873	240.86	245.14	240	246
	2	7	330.86	3.132	1.184	327.96	333.75	325	334
	3	7	315.86	5.080	1.920	311.16	320.56	310	326
	4	7	304.00	1.633	.617	302.49	305.51	302	306
	Total	28	298.43	34.142	6.452	285.19	311.67	240	334
Indeks Massa Tubuh awal (g/cm ²)	1	7	.4886	.02610	.00986	.4644	.5127	.46	.53
	2	7	.4886	.01676	.00634	.4731	.5041	.47	.51
	3	7	.5086	.02545	.00962	.4850	.5321	.48	.55
	4	7	.5171	.03039	.01149	.4890	.5453	.47	.55
	Total	28	.5007	.02693	.00509	.4903	.5112	.46	.55
Indeks Massa Tubuh minggu ke- 8 (g/cm ²)	1	7	.4943	.02936	.01110	.4671	.5214	.46	.54
	2	7	.6871	.02059	.00778	.6681	.7062	.66	.72
	3	7	.7114	.02734	.01033	.6861	.7367	.68	.75
	4	7	.7314	.04100	.01550	.6935	.7693	.67	.78
	Total	28	.6561	.10064	.01902	.6170	.6951	.46	.78
Indeks Massa Tubuh minggu ke- 16 (g/cm ²)	1	7	.5000	.02582	.00976	.4761	.5239	.47	.54
	2	7	.6871	.01704	.00644	.6714	.7029	.66	.71
	3	7	.6814	.02340	.00884	.6598	.7031	.65	.71
	4	7	.6643	.03259	.01232	.6341	.6944	.61	.70
	Total	28	.6332	.08233	.01556	.6013	.6651	.47	.71
Asupan pakan tikus awal (g)	1	7	21.800	.4203	.1589	21.411	22.189	21.2	22.4
	2	7	23.686	1.0715	.4050	22.695	24.677	21.9	25.0
	3	7	23.500	.2309	.0873	23.286	23.714	23.2	23.9
	4	7	23.943	.7913	.2991	23.211	24.675	22.9	25.0
	Total	28	23.232	1.0863	.2053	22.811	23.653	21.2	25.0
Asupan pakan tikus minggu8 (g)	1	7	22.100	.7348	.2777	21.420	22.780	21.2	23.0
	2	7	23.671	.4231	.1599	23.280	24.063	22.9	24.0
	3	7	23.943	1.3831	.5227	22.664	25.222	22.1	26.7
	4	7	24.014	.5699	.2154	23.487	24.541	23.2	24.9
	Total	28	23.432	1.1347	.2144	22.992	23.872	21.2	26.7
Asupan pakan tikus minggu16 (g)	1	7	22.343	.5912	.2235	21.796	22.890	21.6	23.3
	2	7	23.557	.8848	.3344	22.739	24.375	22.4	24.8
	3	7	23.114	.7221	.2729	22.446	23.782	22.3	24.4
	4	7	22.914	.5460	.2064	22.409	23.419	22.2	23.5
	Total	28	22.982	.7944	.1501	22.674	23.290	21.6	24.8
Persentase delta BB induksi obesitas	1	7	22.243	1.8220	.6886	20.558	23.928	19.1	24.1
	2	7	68.229	1.6091	.6082	66.740	69.717	66.5	70.7
	3	7	64.257	2.0132	.7609	62.395	66.119	60.3	66.5
	4	7	64.857	.8423	.3184	64.078	65.636	64.1	66.3
	Total	28	54.896	19.3217	3.6515	47.404	62.389	19.1	70.7
Persentase delta BB suplementasi ECTA	1	7	22.743	.7913	.2991	22.011	23.475	22.0	24.4
	2	7	20.386	.9494	.3589	19.508	21.264	18.9	21.8
	3	7	17.471	.3402	.1286	17.157	17.786	16.8	17.9

	4	7	11.771	.0756	.0286	11.702	11.841	11.7	11.9
	Total	28	18.093	4.2185	.7972	16.457	19.729	11.7	24.4
Persentase delta	1	7	9.867	.3011	.1138	9.589	10.146	9.5	10.4
PB induksi	2	7	9.541	1.0768	.4070	8.546	10.537	8.2	11.1
obesitas	3	7	8.369	.1315	.0497	8.247	8.490	8.2	8.6
	4	7	7.914	.3379	.1277	7.602	8.227	7.5	8.5
	Total	28	8.923	.9904	.1872	8.539	9.307	7.5	11.1
Persentase delta	1	7	10.500	.0000	.0000	10.500	10.500	10.5	10.5
PB suplementasi	2	7	10.071	1.7914	.6771	8.415	11.728	7.3	12.6
ECTA	3	7	11.000	.0000	.0000	11.000	11.000	11.0	11.0
	4	7	11.000	.0000	.0000	11.000	11.000	11.0	11.0
	Total	28	10.643	.9323	.1762	10.281	11.004	7.3	12.6
Persentase delta	1	7	1.1443	1.07244	.40534	.1524	2.1361	.00	2.08
IMT induksi	2	7	40.6971	3.50738	1.32567	37.4534	43.9409	36.73	45.83
obesitas	3	7	39.9600	1.86911	.70646	38.2314	41.6886	36.36	41.67
	4	7	41.4600	.99923	.37767	40.5359	42.3841	39.62	42.55
	Total	28	30.8154	17.56717	3.31988	24.0035	37.6272	.00	45.83
Persentase delta	1	7	1.1971	1.12156	.42391	.1599	2.2344	.00	2.17
IMT suplementasi	2	7	.0686	3.66317	1.38455	-3.3193	3.4564	-5.56	6.06
ECTA	3	7	-4.2029	.70011	.26462	-4.8504	-3.5554	-5.33	-2.94
	4	7	-9.1471	.88848	.33581	-9.9688	-8.3254	-10.26	-7.35
	Total	28	-3.0211	4.55253	.86035	-4.7864	-1.2558	-10.26	6.06
Persentase delta	1	7	1.601	3.9962	1.5104	-2.094	5.297	-4.4	6.5
Pakan induksi	2	7	.187	4.7305	1.7880	-4.188	4.562	-4.0	9.1
obesitas	3	7	1.823	5.7353	2.1678	-3.481	7.127	-5.8	13.0
	4	7	.446	4.4428	1.6792	-3.663	4.555	-6.5	5.9
	Total	28	1.014	4.5539	.8606	-.752	2.780	-6.5	13.0
Persentase delta	1	7	1.229	4.1836	1.5812	-2.641	5.098	-6.0	6.8
Pakan	2	7	-.457	3.1947	1.2075	-3.412	2.497	-3.0	5.5
suplementasi	3	7	-3.171	6.7203	2.5400	-9.387	3.044	-14.5	7.4
ECTA	4	7	-4.600	3.6460	1.3781	-7.972	-1.228	-10.9	-.1
	Total	28	-1.750	4.9508	.9356	-3.670	.170	-14.5	7.4

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Panjang badan awal (cm)	2.372	3	24	.095
Panjang badan minggu ke-8 (cm)	1.968	3	24	.146
Panjang badan mngg16 (cm)	1.335	3	24	.286
Berat badan awal (g)	1.293	3	24	.300
Berat badan minggu ke-8 (g)	1.421	3	24	.261
Berat badan minggi ke-16	.982	3	24	.418

Indeks Massa Tubuh awal (g/cm ²)	.851	3	24	.480
Indeks Massa Tubuh minggu ke-8 (g/cm ²)	1.120	3	24	.361
Indeks Massa Tubuh minggu ke-16 (g/cm ²)	.861	3	24	.475
Asupan pakan tikus awal (g)	5.418	3	24	.052
Asupan pakan tikus minggu8 (g)	.841	3	24	.485
Asupan pakan tikus minggu16 (g)	.617	3	24	.611
Persentase delta BB induksi obesitas	.847	3	24	.482
Persentase delta BB suplementasi ECTA	3.579	3	24	.059
Persentase delta PB induksi obesitas	6.592	3	24	.002
Persentase delta PB suplementasi ECTA	8.619	3	24	.000
Persentase delta IMT induksi obesitas	4.231	3	24	.016
Persentase delta IMT suplementasi ECTA	3.745	3	24	.024
Persentase delta Pakan induksi obesitas	.094	3	24	.962
Persentase delta Pakan suplementasi ECTA	.603	3	24	.619

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Panjang badan awal (cm)	Between Groups	.900	3	.300	1.821	.170
	Within Groups	3.954	24	.165		
	Total	4.854	27			
Panjang badan minggu ke-8 (cm)	Between Groups	3.220	3	1.073	6.440	.002
	Within Groups	4.000	24	.167		
	Total	7.220	27			
Panjang badan minggu ke-16 (cm)	Between Groups	2.112	3	.704	3.978	.020
	Within Groups	4.249	24	.177		
	Total	6.361	27			
Berat badan awal (g)	Between Groups	26.429	3	8.810	.695	.564
	Within Groups	304.000	24	12.667		
	Total	330.429	27			
Berat badan minggu ke-8 (g)	Between Groups	28801.143	3	9600.381	698.815	.000
	Within Groups	329.714	24	13.738		
	Total	29130.857	27			
Berat badan minggu ke-16 (g)	Between Groups	31211.143	3	10403.714	954.052	.000
	Within Groups	261.714	24	10.905		
	Total	31472.857	27			
Indeks Massa Tubuh awal (g/cm ²)	Between Groups	.004	3	.001	2.308	.102
	Within Groups	.015	24	.001		
	Total	.020	27			
Indeks Massa Tubuh	Between Groups	.251	3	.084	90.168	.000

minggu ke-8 (g/cm ²)	Within Groups	.022	24	.001		
	Total	.273	27			
Indeks Massa Tubuh	Between Groups	.168	3	.056	87.071	.000
minggu ke-16	Within Groups	.015	24	.001		
(g/cm ²)	Total	.183	27			
Asupan pakan tikus	Between Groups	19.835	3	6.612	13.195	.000
awal (g)	Within Groups	12.026	24	.501		
	Total	31.861	27			
Asupan pakan tikus	Between Groups	17.021	3	5.674	7.676	.001
minggu8 (g)	Within Groups	17.740	24	.739		
	Total	34.761	27			
Asupan pakan tikus	Between Groups	5.330	3	1.777	3.641	.027
minggu16 (g)	Within Groups	11.711	24	.488		
	Total	17.041	27			
Persentase delta BB	Between Groups	10015.884	3	3338.628	1251.483	.000
induksi obesitas	Within Groups	64.026	24	2.668		
	Total	10079.910	27			
Persentase delta BB	Between Groups	470.584	3	156.861	380.490	.000
suplementasi ECTA	Within Groups	9.894	24	.412		
	Total	480.479	27			
Persentase delta PB	Between Groups	18.191	3	6.064	17.554	.000
induksi obesitas	Within Groups	8.290	24	.345		
	Total	26.482	27			
Persentase delta PB	Between Groups	4.214	3	1.405	1.751	.183
suplementasi ECTA	Within Groups	19.254	24	.802		
	Total	23.469	27			
Persentase delta	Between Groups	8224.686	3	2741.562	611.141	.000
IMT induksi obesitas	Within Groups	107.663	24	4.486		
	Total	8332.349	27			
Persentase delta	Between Groups	463.852	3	154.617	38.760	.000
IMT suplementasi	Within Groups	95.738	24	3.989		
ECTA	Total	559.590	27			
Persentase delta	Between Groups	14.042	3	4.681	.206	.891
Pakan induksi	Within Groups	545.879	24	22.745		
obesitas	Total	559.921	27			
Persentase delta	Between Groups	144.804	3	48.268	2.241	.109

Pakan suplementasi Within Groups ECTA	516.986	24	21.541		
Total	661.790	27			

Multiple Comparisons

LSD

Dependent Variable	(I) Perlakuan pakan HFD	(J) Perlakuan pakan HFD	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Panjang badan awal (cm)	1	2	-.0143	.2170	.948	-.462	.434
		3	.3286	.2170	.143	-.119	.776
		4	.3714	.2170	.100	-.076	.819
	2	1	.0143	.2170	.948	-.434	.462
		3	.3429	.2170	.127	-.105	.791
		4	.3857	.2170	.088	-.062	.834
	3	1	-.3286	.2170	.143	-.776	.119
		2	-.3429	.2170	.127	-.791	.105
		4	.0429	.2170	.845	-.405	.491
	4	1	-.3714	.2170	.100	-.819	.076
		2	-.3857	.2170	.088	-.834	.062
		3	-.0429	.2170	.845	-.491	.405
Panjang badan minggu ke-8 (cm)	1	2	.0429	.2182	.846	-.408	.493
		3	.6286*	.2182	.008	.178	1.079
		4	.7571*	.2182	.002	.307	1.208
	2	1	-.0429	.2182	.846	-.493	.408
		3	.5857*	.2182	.013	.135	1.036
		4	.7143*	.2182	.003	.264	1.165
	3	1	-.6286*	.2182	.008	-1.079	-.178
		2	-.5857*	.2182	.013	-1.036	-.135
		4	.1286	.2182	.561	-.322	.579
	4	1	-.7571*	.2182	.002	-1.208	-.307
		2	-.7143*	.2182	.003	-1.165	-.264
		3	-.1286	.2182	.561	-.579	.322
Panjang badan mgg16 (cm)	1	2	.1143	.2249	.616	-.350	.578
		3	.5286*	.2249	.027	.064	.993
		4	.6571*	.2249	.007	.193	1.121
	2	1	-.1143	.2249	.616	-.578	.350
		3	.4143	.2249	.078	-.050	.878
		4	.5429*	.2249	.024	.079	1.007
	3	1	-.5286*	.2249	.027	-.993	-.064
		2	-.4143	.2249	.078	-.878	.050
		4	.1286	.2249	.573	-.336	.593

	4	1	-0.6571*	.2249	.007	-1.121	-.193
		2	-.5429*	.2249	.024	-1.007	-.079
		3	-.1286	.2249	.573	-.593	.336
Berat badan awal (g)	1	2	-1.143	1.902	.554	-5.07	2.78
		3	-1.571	1.902	.417	-5.50	2.35
		4	-2.714	1.902	.167	-6.64	1.21
	2	1	1.143	1.902	.554	-2.78	5.07
		3	-.429	1.902	.824	-4.35	3.50
		4	-1.571	1.902	.417	-5.50	2.35
	3	1	1.571	1.902	.417	-2.35	5.50
		2	.429	1.902	.824	-3.50	4.35
		4	-1.143	1.902	.554	-5.07	2.78
	4	1	2.714	1.902	.167	-1.21	6.64
		2	1.571	1.902	.417	-2.35	5.50
		3	1.143	1.902	.554	-2.78	5.07
Berat badan minggu ke-8 (g)	1	2	-76.857*	1.981	.000	-80.95	-72.77
		3	-70.857*	1.981	.000	-74.95	-66.77
		4	-74.000*	1.981	.000	-78.09	-69.91
	2	1	76.857*	1.981	.000	72.77	80.95
		3	6.000*	1.981	.006	1.91	10.09
		4	2.857	1.981	.162	-1.23	6.95
	3	1	70.857*	1.981	.000	66.77	74.95
		2	-6.000*	1.981	.006	-10.09	-1.91
		4	-3.143	1.981	.126	-7.23	.95
	4	1	74.000*	1.981	.000	69.91	78.09
		2	-2.857	1.981	.162	-6.95	1.23
		3	3.143	1.981	.126	-.95	7.23
Berat badan minggu ke-16	1	2	-87.857*	1.765	.000	-91.50	-84.21
		3	-72.857*	1.765	.000	-76.50	-69.21
		4	-61.000*	1.765	.000	-64.64	-57.36
	2	1	87.857*	1.765	.000	84.21	91.50
		3	15.000*	1.765	.000	11.36	18.64
		4	26.857*	1.765	.000	23.21	30.50
	3	1	72.857*	1.765	.000	69.21	76.50
		2	-15.000*	1.765	.000	-18.64	-11.36
		4	11.857*	1.765	.000	8.21	15.50
	4	1	61.000*	1.765	.000	57.36	64.64
		2	-26.857*	1.765	.000	-30.50	-23.21
		3	-11.857*	1.765	.000	-15.50	-8.21
Indeks Massa Tubuh awal (g/cm ²)	1	2	.00000	.01345	1.000	-.0278	.0278
		3	-.02000	.01345	.150	-.0478	.0078
		4	-.02857*	.01345	.044	-.0563	-.0008
	2	1	.00000	.01345	1.000	-.0278	.0278

		3		-.02000	.01345	.150	-.0478	.0078
		4		-.02857*	.01345	.044	-.0563	-.0008
	3	1		.02000	.01345	.150	-.0078	.0478
		2		.02000	.01345	.150	-.0078	.0478
		4		-.00857	.01345	.530	-.0363	.0192
	4	1		.02857*	.01345	.044	.0008	.0563
		2		.02857*	.01345	.044	.0008	.0563
		3		.00857	.01345	.530	-.0192	.0363
Indeks Massa Tubuh minggu ke-8 (g/cm ²)	1	2		-.19286*	.01629	.000	-.2265	-.1592
		3		-.21714*	.01629	.000	-.2508	-.1835
		4		-.23714*	.01629	.000	-.2708	-.2035
	2	1		.19286*	.01629	.000	.1592	.2265
		3		-.02429	.01629	.149	-.0579	.0093
		4		-.04429*	.01629	.012	-.0779	-.0107
	3	1		.21714*	.01629	.000	.1835	.2508
		2		.02429	.01629	.149	-.0093	.0579
		4		-.02000	.01629	.231	-.0536	.0136
	4	1		.23714*	.01629	.000	.2035	.2708
		2		.04429*	.01629	.012	.0107	.0779
		3		.02000	.01629	.231	-.0136	.0536
Indeks Massa Tubuh minggu ke-16 (g/cm ²)	1	2		-.18714*	.01354	.000	-.2151	-.1592
		3		-.18143*	.01354	.000	-.2094	-.1535
		4		-.16429*	.01354	.000	-.1922	-.1363
	2	1		.18714*	.01354	.000	.1592	.2151
		3		.00571	.01354	.677	-.0222	.0337
		4		.02286	.01354	.104	-.0051	.0508
	3	1		.18143*	.01354	.000	.1535	.2094
		2		-.00571	.01354	.677	-.0337	.0222
		4		.01714	.01354	.218	-.0108	.0451
	4	1		.16429*	.01354	.000	.1363	.1922
		2		-.02286	.01354	.104	-.0508	.0051
		3		-.01714	.01354	.218	-.0451	.0108
Asupan pakan tikus awal (g)	1	2		-1.8857*	.3784	.000	-2.667	-1.105
		3		-1.7000*	.3784	.000	-2.481	-.919
		4		-2.1429*	.3784	.000	-2.924	-1.362
	2	1		1.8857*	.3784	.000	1.105	2.667
		3		.1857	.3784	.628	-.595	.967
		4		-.2571	.3784	.503	-1.038	.524
	3	1		1.7000*	.3784	.000	.919	2.481
		2		-.1857	.3784	.628	-.967	.595
		4		-.4429	.3784	.253	-1.224	.338
	4	1		2.1429*	.3784	.000	1.362	2.924
		2		.2571	.3784	.503	-.524	1.038

		3	.4429	.3784	.253	-.338	1.224	
Asupan pakan tikus minggu8 (g)	1	2	-1.5714*	.4596	.002	-2.520	-.623	
		3	-1.8429*	.4596	.001	-2.791	-.894	
		4	-1.9143*	.4596	.000	-2.863	-.966	
		1	1.5714*	.4596	.002	.623	2.520	
	2	3	-.2714	.4596	.560	-1.220	.677	
		4	-.3429	.4596	.463	-1.291	.606	
		1	1.8429*	.4596	.001	.894	2.791	
	3	2	.2714	.4596	.560	-.677	1.220	
		4	-.0714	.4596	.878	-1.020	.877	
		1	1.9143*	.4596	.000	.966	2.863	
	4	2	.3429	.4596	.463	-.606	1.291	
		3	.0714	.4596	.878	-.877	1.020	
2		-1.2143*	.3734	.003	-1.985	-.444		
Asupan pakan tikus minggu16 (g)	1	3	-.7714*	.3734	.050	-1.542	-.001	
		4	-.5714	.3734	.139	-1.342	.199	
		1	1.2143*	.3734	.003	.444	1.985	
		3	.4429	.3734	.247	-.328	1.214	
	2	4	.6429	.3734	.098	-.128	1.414	
		1	.7714*	.3734	.050	.001	1.542	
		2	-.4429	.3734	.247	-1.214	.328	
	3	4	.2000	.3734	.597	-.571	.971	
		1	.5714	.3734	.139	-.199	1.342	
		2	-.6429	.3734	.098	-1.414	.128	
	4	3	-.2000	.3734	.597	-.971	.571	
		2	-45.9857*	.8730	.000	-47.788	-44.184	
3		-42.0143*	.8730	.000	-43.816	-40.212		
Persentase delta BB induksi obesitas	1	4	-42.6143*	.8730	.000	-44.416	-40.812	
		1	45.9857*	.8730	.000	44.184	47.788	
		3	3.9714*	.8730	.000	2.170	5.773	
		4	3.3714*	.8730	.001	1.570	5.173	
	2	1	42.0143*	.8730	.000	40.212	43.816	
		2	-3.9714*	.8730	.000	-5.773	-2.170	
		4	-.6000	.8730	.499	-2.402	1.202	
	3	1	42.6143*	.8730	.000	40.812	44.416	
		2	-3.3714*	.8730	.001	-5.173	-1.570	
		3	.6000	.8730	.499	-1.202	2.402	
	Persentase delta BB suplementasi ECTA	1	2	2.3571*	.3432	.000	1.649	3.065
			3	5.2714*	.3432	.000	4.563	5.980
4			10.9714*	.3432	.000	10.263	11.680	
1			-2.3571*	.3432	.000	-3.065	-1.649	
2		3	2.9143*	.3432	.000	2.206	3.623	
		4	8.6143*	.3432	.000	7.906	9.323	

	3	1	-5.2714*	.3432	.000	-5.980	-4.563
		2	-2.9143*	.3432	.000	-3.623	-2.206
		4	5.7000*	.3432	.000	4.992	6.408
	4	1	-10.9714*	.3432	.000	-11.680	-10.263
		2	-8.6143*	.3432	.000	-9.323	-7.906
		3	-5.7000*	.3432	.000	-6.408	-4.992
Persentase delta PB induksi obesitas	1	2	.3257	.3142	.310	-.323	.974
		3	1.4986*	.3142	.000	.850	2.147
		4	1.9529*	.3142	.000	1.304	2.601
	2	1	-.3257	.3142	.310	-.974	.323
		3	1.1729*	.3142	.001	.524	1.821
		4	1.6271*	.3142	.000	.979	2.276
	3	1	-1.4986*	.3142	.000	-2.147	-.850
		2	-1.1729*	.3142	.001	-1.821	-.524
		4	.4543	.3142	.161	-.194	1.103
	4	1	-1.9529*	.3142	.000	-2.601	-1.304
		2	-1.6271*	.3142	.000	-2.276	-.979
		3	-.4543	.3142	.161	-1.103	.194
Persentase delta PB suplementasi ECTA	1	2	.4286	.4788	.380	-.560	1.417
		3	-.5000	.4788	.307	-1.488	.488
		4	-.5000	.4788	.307	-1.488	.488
	2	1	-.4286	.4788	.380	-1.417	.560
		3	-.9286	.4788	.064	-1.917	.060
		4	-.9286	.4788	.064	-1.917	.060
	3	1	.5000	.4788	.307	-.488	1.488
		2	.9286	.4788	.064	-.060	1.917
		4	.0000	.4788	1.000	-.988	.988
	4	1	.5000	.4788	.307	-.488	1.488
		2	.9286	.4788	.064	-.060	1.917
		3	.0000	.4788	1.000	-.988	.988
Persentase delta IMT induksi obesitas	1	2	-39.55286*	1.13212	.000	-41.8894	-37.2163
		3	-38.81571*	1.13212	.000	-41.1523	-36.4791
		4	-40.31571*	1.13212	.000	-42.6523	-37.9791
	2	1	39.55286*	1.13212	.000	37.2163	41.8894
		3	.73714	1.13212	.521	-1.5994	3.0737
		4	-.76286	1.13212	.507	-3.0994	1.5737
	3	1	38.81571*	1.13212	.000	36.4791	41.1523
		2	-.73714	1.13212	.521	-3.0737	1.5994
		4	-1.50000	1.13212	.198	-3.8366	.8366
	4	1	40.31571*	1.13212	.000	37.9791	42.6523
		2	.76286	1.13212	.507	-1.5737	3.0994
		3	1.50000	1.13212	.198	-.8366	3.8366
Persentase delta	1	2	1.12857	1.06758	.301	-1.0748	3.3320

IMT suplementasi ECTA	3	5.40000*	1.06758	.000	3.1966	7.6034	
	4	10.34429*	1.06758	.000	8.1409	12.5477	
	2	1	-1.12857	1.06758	.301	-3.3320	1.0748
		3	4.27143*	1.06758	.001	2.0680	6.4748
		4	9.21571*	1.06758	.000	7.0123	11.4191
	3	1	-5.40000*	1.06758	.000	-7.6034	-3.1966
		2	-4.27143*	1.06758	.001	-6.4748	-2.0680
		4	4.94429*	1.06758	.000	2.7409	7.1477
	4	1	-10.34429*	1.06758	.000	-12.5477	-8.1409
		2	-9.21571*	1.06758	.000	-11.4191	-7.0123
		3	-4.94429*	1.06758	.000	-7.1477	-2.7409
	Persentase delta Pakan induksi obesitas	1	2	1.4143	2.5492	.584	-3.847
3			-.2214	2.5492	.932	-5.483	5.040
4			1.1557	2.5492	.654	-4.106	6.417
2		1	-1.4143	2.5492	.584	-6.676	3.847
		3	-1.6357	2.5492	.527	-6.897	3.626
		4	-.2586	2.5492	.920	-5.520	5.003
3		1	.2214	2.5492	.932	-5.040	5.483
		2	1.6357	2.5492	.527	-3.626	6.897
		4	1.3771	2.5492	.594	-3.884	6.638
4		1	-1.1557	2.5492	.654	-6.417	4.106
		2	.2586	2.5492	.920	-5.003	5.520
		3	-1.3771	2.5492	.594	-6.638	3.884
Persentase delta Pakan suplementasi ECTA	1	2	1.6857	2.4808	.503	-3.434	6.806
		3	4.4000	2.4808	.089	-.720	9.520
		4	5.8286*	2.4808	.027	.708	10.949
	2	1	-1.6857	2.4808	.503	-6.806	3.434
		3	2.7143	2.4808	.285	-2.406	7.834
		4	4.1429	2.4808	.108	-.977	9.263
	3	1	-4.4000	2.4808	.089	-9.520	.720
		2	-2.7143	2.4808	.285	-7.834	2.406
		4	1.4286	2.4808	.570	-3.692	6.549
	4	1	-5.8286*	2.4808	.027	-10.949	-.708
		2	-4.1429	2.4808	.108	-9.263	.977
		3	-1.4286	2.4808	.570	-6.549	3.692

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

2. HASIL UJI PAIRED T TEST PARAMETER ANTROPOMETRI TIKUS WISTAR INDUKSI OBESITAS (MINGGU AWAL VS MINGGU 8)

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 2	Panjang badan KP awal (cm) - Panjang badan KP minggu ke-8 (cm)	-1.7429	.1902	.0719	-1.9188	-1.5669	-24.239	6	.000
Pair 4	Panjang badan ECTA2 awal (cm) - Panjang badan ECTA2 minggu ke-8 (cm)	-1.4143	.0378	.0143	-1.4492	-1.3793	-99.000	6	.000
Pair 5	Berat badan KN awal (g) - Berat badan KN minggu ke-8 (g)	-36.000	2.708	1.024	-38.504	-33.496	-35.172	6	.000
Pair 6	Berat badan KP awal (g) - Berat badan KP minggu ke-8 (g)	-111.429	.976	.369	-112.331	-110.526	-302.093	6	.000
Pair 7	Berat badan ECTA1 awal (g) - Berat badan ECTA1 minggu ke-8 (g)	-105.143	.378	.143	-105.492	-104.793	-736.000	6	.000
Pair 8	Berat badan ECTA2 awal (g) - Berat badan ECTA2 minggu ke-8 (g)	-107.000	.816	.309	-107.755	-106.245	-346.720	6	.000
Pair 9	Indeks Massa Tubuh KN awal (g/cm ²) - Indeks Massa Tubuh KN minggu ke-8 (g/cm ²)	-.00571	.00535	.00202	-.01066	-.00077	-2.828	6	.030
Pair 10	Indeks Massa Tubuh KP awal (g/cm ²) - Indeks Massa Tubuh KP minggu ke-8 (g/cm ²)	-.19857	.01464	.00553	-.21211	-.18503	-35.890	6	.000
Pair 11	Indeks Massa Tubuh ECTA1 awal (g/cm ²) - Indeks Massa Tubuh ECTA1 minggu ke-8 (g/cm ²)	-.20286	.00488	.00184	-.20737	-.19834	-109.993	6	.000
Pair 12	Indeks Massa Tubuh ECTA2 awal (g/cm ²) - Indeks Massa Tubuh ECTA2 minggu ke-8 (g/cm ²)	-.21429	.01134	.00429	-.22477	-.20380	-50.000	6	.000

Pair 13	Asupan pakan KN awal (g) - Asupan pakan KN minggu8 (g)	-.3000	.8775	.3317	-1.1115	.5115	-.905	6	.401
Pair 14	Asupan pakan KP awal (g) - Asupan pakan KP minggu8 (g)	.0143	1.0839	.4097	-.9881	1.0167	.035	6	.973
Pair 15	Asupan pakan ECTA1 awal (g) - Asupan pakan ECTA1 minggu8 (g)	-.4429	1.3452	.5084	-1.6869	.8012	-.871	6	.417
Pair 16	Asupan pakan ECTA2 awal (g) - Asupan pakan ECTA2 minggu8 (g)	-.0714	1.0547	.3986	-1.0469	.9040	-.179	6	.864

3. HASIL UJI PAIRED T TEST PARAMETER ANTROPOMETRI TIKUS WISTAR SUPLEMENTASI ECTA (MINGGU 8 VS MINGGU 16)

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	Panjang badan KN minggu ke-8 (cm) - Panjang badan KN minggu16 (cm)	2.0429	.5442	.2057	1.5395	2.5462	9.931	6	.000
Pair 2	Panjang badan KP minggu ke-8 (cm) - Panjang badan KP minggu16 (cm)	-1.9286	.3402	.1286	-2.2432	-1.6140	-15.000	6	.000
Pair 5	Berat badan KN minggu ke-8 (g) - Berat badan KN minggu ke-16	-45.000	1.000	.378	-45.925	-44.075	-119.059	6	.000
Pair 6	Berat badan KP minggu ke-8 (g) - Berat badan KP minggu ke-16	-56.000	1.826	.690	-57.689	-54.311	-81.152	6	.000
Pair 9	Indeks Massa Tubuh KN minggu ke-8 (g/cm ²) - Indeks Massa Tubuh KN minggu ke-16 (g/cm ²)	-.00571	.00535	.00202	-.01066	-.00077	-2.828	6	.030

Pair 10	Indeks Massa Tubuh KP minggu ke-8 (g/cm ²) - Indeks Massa Tubuh KP minggu ke-16 (g/cm ²)	.00000	.02517	.00951	-.02327	.02327	.000	6	1.000
Pair 11	Indeks Massa Tubuh ECTA1 minggu ke-8 (g/cm ²) - Indeks Massa Tubuh ECTA1 minggu ke-16 (g/cm ²)	.03000	.00577	.00218	.02466	.03534	13.748	6	.000
Pair 12	Indeks Massa Tubuh ECTA2 minggu ke-8 (g/cm ²) - Indeks Massa Tubuh ECTA2 minggu ke-16 (g/cm ²)	.06714	.00951	.00360	.05835	.07594	18.676	6	.000
Pair 13	Asupan pakan KN minggu8 (g) - Asupan pakan KN minggu16 (g)	-.2429	.9361	.3538	-1.1086	.6228	-.686	6	.518
Pair 14	Asupan pakan KP minggu8 (g) - Asupan pakan KP minggu16 (g)	.1143	.7493	.2832	-.5787	.8073	.404	6	.701
Pair 15	Asupan pakan ECTA1 minggu8 (g) - Asupan pakan ECTA1 minggu16 (g)	.8286	1.6968	.6413	-.7407	2.3978	1.292	6	.244
Pair 16	Asupan pakan ECTA2 minggu8 (g) - Asupan pakan ECTA2 minggu16 (g)	1.1000	.9037	.3416	.2642	1.9358	3.220	6	.018

LAMPIRAN 12. MASTER TABEL PROFIL LIPID TIKUS (KOLESTROL TOTAL, TRIGLISERIDA, LDL, HDL)

Kelompok	SAMPSEL	KOLESTEROL TOTAL (mmol/L)		TRIGLISERIDA (mg/dL)		LDL (mg/dl)		HDL (mg/dl)	
		PRE	POST	PRE	POST	PRE	POST	PRE	POST
(KN)	1	2.92	2.66	93.30	64.27	43.52	25.91	46.24	50.53
	2	3.00	2.68	90.40	65.51	46.91	28.82	49.61	51.11
	3	2.79	2.76	92.17	61.83	45.89	27.46	51.61	50.03
	4	2.85	2.67	91.65	64.79	49.62	21.14	47.67	52.01
	5	3.00	2.76	101.07	62.15	50.26	21.74	44.57	52.46
	6	3.00	2.86	100.99	62.52	47.51	20.06	50.58	52.20
	7	2.90	2.74	103.26	61.59	50.88	21.12	48.78	43.56
(KP)	8	4.65	5.08	172.03	172.50	104.21	107.49	33.12	24.88
	9	4.50	4.88	149.92	150.60	109.12	110.90	32.42	26.81
	10	4.70	5.12	150.97	155.46	106.89	107.83	32.59	24.23
	11	4.20	4.71	168.67	173.21	115.42	110.67	33.43	24.67
	12	4.65	4.32	173.95	172.01	113.31	108.65	34.40	22.34
	13	4.84	4.50	148.02	153.95	105.09	111.25	32.12	23.48
	14	4.49	4.89	124.27	123.24	108.92	114.81	36.36	24.14
ECTA I	15	4.40	4.17	195.99	184.52	107.04	97.41	35.22	37.09
	16	4.67	4.36	156.68	141.93	91.90	85.22	32.77	38.23
	17	4.95	4.65	163.85	160.29	109.93	89.77	34.33	36.50
	18	4.65	4.32	127.36	122.71	101.62	86.30	35.05	38.41
	19	4.33	4.10	172.32	161.68	117.36	95.23	32.55	36.80
	20	4.68	4.39	139.92	131.86	110.09	82.44	31.23	35.06
	21	4.48	4.25	123.57	118.99	108.12	87.59	33.82	37.19
ECTA II	22	4.77	3.28	183.27	66.06	103.96	22.04	33.56	43.34
	23	4.69	3.27	179.81	64.29	107.62	28.54	30.65	46.61
	24	4.75	3.33	167.24	66.88	112.83	27.20	32.90	44.42
	25	4.64	3.01	105.09	64.12	113.39	23.06	29.52	44.02
	26	4.80	3.32	191.67	66.19	110.52	26.90	35.14	45.51
	27	4.62	3.42	105.02	63.99	104.76	29.01	30.21	50.15

	28	4.62	3.16	178.49	65.02	106.68	31.44	34.89	51.65
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LAMPIRAN 14. MASTER TABEL HASIL UJI STATISTIK PROFIL LIPID TIKUS

1. Hasil Uji One Way Anova Profil Lipid Tikus Wistar

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Kolesterol total pre (mmol/l)	1	7	2.9229	.08301	.03137	2.8461	2.9996	2.79	3.00
	2	7	4.5757	.20436	.07724	4.3867	4.7647	4.20	4.84
	3	7	4.5943	.20951	.07919	4.4005	4.7881	4.33	4.95
	4	7	4.6986	.07515	.02840	4.6291	4.7681	4.62	4.80
	Total	28	4.1979	.76553	.14467	3.9010	4.4947	2.79	4.95
Kolesterol total post (mmol/L)	1	7	2.7329	.07041	.02661	2.6677	2.7980	2.66	2.86
	2	7	4.7857	.29506	.11152	4.5128	5.0586	4.32	5.12
	3	7	4.3200	.17851	.06747	4.1549	4.4851	4.10	4.65
	4	7	3.0557	.13352	.05047	2.9322	3.1792	2.81	3.22
	Total	28	3.7236	.88674	.16758	3.3797	4.0674	2.66	5.12
Trigliserida Pre (mg/dl)	1	7	96.1200	5.40761	2.04388	91.1188	101.1212	90.40	103.26
	2	7	155.4043	17.65384	6.67252	139.0772	171.7314	124.27	173.95
	3	7	154.2414	25.93743	9.80343	130.2533	178.2295	123.57	195.99
	4	7	158.6557	37.31951	14.10545	124.1409	193.1705	105.02	191.67
	Total	28	141.1054	35.17120	6.64673	127.4674	154.7433	90.40	195.99
Trigliserida Post (mg/dl)	1	7	63.2371	1.58290	.59828	61.7732	64.7011	61.59	65.51
	2	7	157.2814	17.88916	6.76147	140.7367	173.8261	123.24	173.21
	3	7	145.9971	23.88279	9.02685	123.9092	168.0850	118.99	184.52
	4	7	65.2214	1.15686	.43725	64.1515	66.2913	63.99	66.88
	Total	28	107.9343	46.86803	8.85723	89.7608	126.1078	61.59	184.52

LDL Pre (mg/dl)	1	7	47.7986	2.63607	.99634	45.3606	50.2365	43.52	50.88
	2	7	108.9943	4.13315	1.56218	105.1718	112.8168	104.21	115.42
	3	7	106.5800	7.98371	3.01756	99.1963	113.9637	91.90	117.36
	4	7	108.5371	3.77310	1.42610	105.0476	112.0267	103.96	113.39
	Total	28	92.9775	27.00183	5.10287	82.5073	103.4477	43.52	117.36
LDL Post (mg/dl)	1	7	23.7500	3.54776	1.34093	20.4689	27.0311	20.06	28.82
	2	7	110.2286	2.53059	.95647	107.8882	112.5690	107.49	114.81
	3	7	89.1371	5.42529	2.05057	84.1196	94.1547	82.44	97.41
	4	7	26.8843	3.32182	1.25553	23.8121	29.9565	22.04	31.44
	Total	28	62.5000	38.80622	7.33369	47.4525	77.5475	20.06	114.81
HDL Pre (mg/dl)	1	7	48.4371	2.46721	.93252	46.1554	50.7189	44.57	51.61
	2	7	33.4914	1.47407	.55715	32.1281	34.8547	32.12	36.36
	3	7	33.5671	1.45539	.55009	32.2211	34.9132	31.23	35.22
	4	7	32.4100	2.28967	.86541	30.2924	34.5276	29.52	35.14
	Total	28	36.9764	7.00663	1.32413	34.2595	39.6933	29.52	51.61
HDL Post mg/dl)	1	7	50.2714	3.09310	1.16908	47.4108	53.1321	43.56	52.46
	2	7	24.3643	1.37168	.51844	23.0957	25.6329	22.34	26.81
	3	7	37.0400	1.12454	.42504	36.0000	38.0800	35.06	38.41
	4	7	46.5286	3.19619	1.20805	43.5726	49.4846	43.34	51.65
	Total	28	39.5511	10.43758	1.97252	35.5038	43.5983	22.34	52.46

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Kolesterol total pre (mmol/l)	2.775	3	24	.063
Kolesterol total post (mmol/L)	3.885	3	24	.055
Triglicerida Pre (mg/dl)	5.824	3	24	.054
Triglicerida Post (mg/dl)	9.599	3	24	.060
LDL Pre (mg/dl)	1.678	3	24	.198
LDL Post (mg/dl)	1.906	3	24	.156
HDL Pre (mg/dl)	1.715	3	24	.191
HDL Post (mg/dl)	2.132	3	24	.123

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Kolesterol total pre (mmol/l)	Between Groups	15.234	3	5.078	206.852	.000
	Within Groups	.589	24	.025		
	Total	15.823	27			
Kolesterol total post (mmol/L)	Between Groups	20.380	3	6.793	191.747	.000
	Within Groups	.850	24	.035		
	Total	21.230	27			
Triglicerida Pre (mg/dl)	Between Groups	18960.992	3	6320.331	10.506	.000
	Within Groups	14438.377	24	601.599		
	Total	33399.368	27			
Triglicerida Post (mg/dl)	Between Groups	53943.010	3	17981.003	80.429	.000
	Within Groups	5365.520	24	223.563		
	Total	59308.531	27			
LDL Pre (mg/dl)	Between Groups	19073.625	3	6357.875	249.310	.000
	Within Groups	612.046	24	25.502		
	Total	19685.671	27			

LDL Post (mg/dl)	Between Groups	40303.169	3	13434.390	903.780	.000
	Within Groups	356.752	24	14.865		
	Total	40659.921	27			
HDL Pre (mg/dl)	Between Groups	1231.781	3	410.594	105.140	.000
	Within Groups	93.725	24	3.905		
	Total	1325.505	27			
HDL Post (mg/dl)	Between Groups	2803.889	3	934.630	163.048	.000
	Within Groups	137.574	24	5.732		
	Total	2941.462	27			

Multiple Comparisons

LSD

Dependent Variable	(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Kolesterol total pre (mmol/l)	1	2	-1.65286*	.08375	.000	-1.8257	-1.4800
		3	-1.67143*	.08375	.000	-1.8443	-1.4986
		4	-1.77571*	.08375	.000	-1.9486	-1.6029
	2	1	1.65286*	.08375	.000	1.4800	1.8257
		3	-.01857	.08375	.826	-.1914	.1543
		4	-.12286	.08375	.155	-.2957	.0500
	3	1	1.67143*	.08375	.000	1.4986	1.8443
		2	.01857	.08375	.826	-.1543	.1914
		4	-.10429	.08375	.225	-.2771	.0686
	4	1	1.77571*	.08375	.000	1.6029	1.9486
		2	.12286	.08375	.155	-.0500	.2957
		3	.10429	.08375	.225	-.0686	.2771
Kolesterol total	1	2	-2.05286*	.10061	.000	-2.2605	-1.8452

post (mmol/L)	3	3	-1.58714 ⁺	.10061	.000	-1.7948	-1.3795
		4	-.32286 ⁺	.10061	.004	-.5305	-.1152
	2	1	2.05286 ⁺	.10061	.000	1.8452	2.2605
		3	.46571 ⁺	.10061	.000	.2581	.6734
		4	1.73000 ⁺	.10061	.000	1.5224	1.9376
	3	1	1.58714 ⁺	.10061	.000	1.3795	1.7948
		2	-.46571 ⁺	.10061	.000	-.6734	-.2581
		4	1.26429 ⁺	.10061	.000	1.0566	1.4719
	4	1	.32286 ⁺	.10061	.004	.1152	.5305
		2	-1.73000 ⁺	.10061	.000	-1.9376	-1.5224
		3	-1.26429 ⁺	.10061	.000	-1.4719	-1.0566
	Triglicerida Pre (mg/dl)	1	2	-59.28429 ⁺	13.11051	.000	-86.3430
3			-58.12143 ⁺	13.11051	.000	-85.1802	-31.0627
4			-62.53571 ⁺	13.11051	.000	-89.5945	-35.4770
2		1	59.28429 ⁺	13.11051	.000	32.2255	86.3430
		3	1.16286	13.11051	.930	-25.8959	28.2216
		4	-3.25143	13.11051	.806	-30.3102	23.8073
3		1	58.12143 ⁺	13.11051	.000	31.0627	85.1802
		2	-1.16286	13.11051	.930	-28.2216	25.8959
		4	-4.41429	13.11051	.739	-31.4730	22.6445
4		1	62.53571 ⁺	13.11051	.000	35.4770	89.5945
		2	3.25143	13.11051	.806	-23.8073	30.3102
		3	4.41429	13.11051	.739	-22.6445	31.4730
Triglicerida Post (mg/dl)	1	2	-94.04429 ⁺	7.99220	.000	-110.5394	-77.5492
		3	-82.76000 ⁺	7.99220	.000	-99.2551	-66.2649
		4	-1.98429	7.99220	.806	-18.4794	14.5108
	2	1	94.04429 ⁺	7.99220	.000	77.5492	110.5394
		3	11.28429	7.99220	.171	-5.2108	27.7794

		4	92.06000 ⁺	7.99220	.000	75.5649	108.5551
	3	1	82.76000 ⁺	7.99220	.000	66.2649	99.2551
		2	-11.28429	7.99220	.171	-27.7794	5.2108
		4	80.77571 ⁺	7.99220	.000	64.2806	97.2708
	4	1	1.98429	7.99220	.806	-14.5108	18.4794
		2	-92.06000 ⁺	7.99220	.000	-108.5551	-75.5649
		3	-80.77571 ⁺	7.99220	.000	-97.2708	-64.2806
LDL Pre (mg/dl)	1	2	-61.19571 ⁺	2.69931	.000	-66.7668	-55.6246
		3	-58.78143 ⁺	2.69931	.000	-64.3525	-53.2103
		4	-60.73857 ⁺	2.69931	.000	-66.3097	-55.1675
	2	1	61.19571 ⁺	2.69931	.000	55.6246	66.7668
		3	2.41429	2.69931	.380	-3.1568	7.9854
		4	.45714	2.69931	.867	-5.1140	6.0282
	3	1	58.78143 ⁺	2.69931	.000	53.2103	64.3525
		2	-2.41429	2.69931	.380	-7.9854	3.1568
		4	-1.95714	2.69931	.475	-7.5282	3.6140
	4	1	60.73857 ⁺	2.69931	.000	55.1675	66.3097
		2	-.45714	2.69931	.867	-6.0282	5.1140
		3	1.95714	2.69931	.475	-3.6140	7.5282
LDL Post (mg/dl)	1	2	-86.47857 ⁺	2.06084	.000	-90.7319	-82.2252
		3	-65.38714 ⁺	2.06084	.000	-69.6405	-61.1338
		4	-3.13429	2.06084	.141	-7.3876	1.1191
	2	1	86.47857 ⁺	2.06084	.000	82.2252	90.7319
		3	21.09143 ⁺	2.06084	.000	16.8381	25.3448
		4	83.34429 ⁺	2.06084	.000	79.0909	87.5976
	3	1	65.38714 ⁺	2.06084	.000	61.1338	69.6405
		2	-21.09143 ⁺	2.06084	.000	-25.3448	-16.8381
		4	62.25286 ⁺	2.06084	.000	57.9995	66.5062

	4	1	3.13429	2.06084	.141	-1.1191	7.3876
		2	-83.34429*	2.06084	.000	-87.5976	-79.0909
		3	-62.25286*	2.06084	.000	-66.5062	-57.9995
HDL Pre (mg/dl)	1	2	14.94571*	1.05630	.000	12.7656	17.1258
		3	14.87000*	1.05630	.000	12.6899	17.0501
		4	16.02714*	1.05630	.000	13.8470	18.2072
	2	1	-14.94571*	1.05630	.000	-17.1258	-12.7656
		3	-.07571	1.05630	.943	-2.2558	2.1044
		4	1.08143	1.05630	.316	-1.0987	3.2615
	3	1	-14.87000*	1.05630	.000	-17.0501	-12.6899
		2	.07571	1.05630	.943	-2.1044	2.2558
		4	1.15714	1.05630	.284	-1.0230	3.3372
	4	1	-16.02714*	1.05630	.000	-18.2072	-13.8470
		2	-1.08143	1.05630	.316	-3.2615	1.0987
		3	-1.15714	1.05630	.284	-3.3372	1.0230
HDL Post (mg/dl)	1	2	25.90714*	1.27976	.000	23.2658	28.5484
		3	13.23143*	1.27976	.000	10.5901	15.8727
		4	3.74286*	1.27976	.007	1.1016	6.3842
	2	1	-25.90714*	1.27976	.000	-28.5484	-23.2658
		3	-12.67571*	1.27976	.000	-15.3170	-10.0344
		4	-22.16429*	1.27976	.000	-24.8056	-19.5230
	3	1	-13.23143*	1.27976	.000	-15.8727	-10.5901
		2	12.67571*	1.27976	.000	10.0344	15.3170
		4	-9.48857*	1.27976	.000	-12.1299	-6.8473
	4	1	-3.74286*	1.27976	.007	-6.3842	-1.1016
		2	22.16429*	1.27976	.000	19.5230	24.8056
		3	9.48857*	1.27976	.000	6.8473	12.1299

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

2. HASIL UJI PAIRED SAMPLE T TEST PROFIL LIPID TIKUS WISTAR SUPLEMENTASI ECTA (MINGGU 8 VS MINGGU 16)

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Kolesterol Total KN Pre (mg/dl) - Kolesterol Total KN Post (mg/dl)	7.35000	3.68153	1.39149	3.94515	10.75485	5.282	6	.002
Pair 2	Kolesterol Total KP Pre (mg/dl) - Kolesterol Total KP Post (mg/dl)	-8.12714	14.53987	5.49555	-21.57428	5.31999	-1.479	6	.190
Pair 3	Kolesterol Total ECTA1 Pre (mg/dl) - Kolesterol Total ECTA1 Post (mg/dl)	10.56143	1.66611	.62973	9.02054	12.10232	16.771	6	.000
Pair 4	Kolesterol Total ECTA2 Pre (mg/dl) - Kolesterol Total ECTA2 Post (mg/dl)	63.57000	5.00236	1.89072	58.94359	68.19641	33.622	6	.000
Pair 5	Trigliserida KN Pre (mg/dl) - Trigliserida KN Post (mg/dl)	32.88286	6.66269	2.51826	26.72090	39.04481	13.058	6	.000
Pair 6	Trigliserida KP Pre (mg/dl) - Trigliserida KP Post (mg/dl)	-1.87714	3.07622	1.16270	-4.72217	.96789	-1.614	6	.158
Pair 7	Trigliserida ECTA1 Pre (mg/dl) - Trigliserida ECTA1 Post (mg/dl)	8.24429	4.21883	1.59457	4.34251	12.14606	5.170	6	.002
Pair 8	Trigliserida ECTA2 Pre (mg/dl) - Trigliserida ECTA2 Post (mg/dl)	93.43429	36.57890	13.82553	59.60444	127.26413	6.758	6	.001
Pair 9	LDL KN Pre (mg/dl) - LDL KN Post (mg/dl)	24.04857	5.66200	2.14003	18.81209	29.28505	11.237	6	.000
Pair 10	LDL KP Pre (mg/dl) - LDL KP Post (mg/dl)	-1.23429	4.49188	1.69777	-5.38858	2.92001	-.727	6	.495
Pair 11	LDL ECTA1 Pre (mg/dl) - LDL ECTA1 Post (mg/dl)	17.44286	7.35362	2.77941	10.64189	24.24383	6.276	6	.001
Pair 12	LDL ECTA2 Pre (mg/dl) - LDL ECTA2 Post (mg/dl)	81.65286	5.44119	2.05658	76.62059	86.68512	39.703	6	.000

Pair 13	HDL KN Pre (mg/dl) - HDL KN Post (mg/dl)	-1.83429	4.29261	1.62245	-5.80428	2.13571	-1.131	6	.301
Pair 14	HDL KP Pre (mg/dl) - HDL KP Post (mg/dl)	9.12714	2.31967	.87675	6.98180	11.27248	10.410	6	.000
Pair 15	HDL ECTA1 Pre (mg/dl) - HDL ECTA1 Post (mg/dl)	-3.47286	1.22271	.46214	-4.60368	-2.34204	-7.515	6	.000
Pair 16	HDL ECTA2 Pre (mg/dl) - HDL ECTA2 Post (mg/dl)	-14.11857	3.74233	1.41447	-17.57965	-10.65750	-9.982	6	.000

LAMPIRAN 14. MASTER TABEL HASIL UJI STATISTIK PROFIL LIPID TIKUS

1. HASIL UJI ONE WAY ANOVA PROFIL LIPID TIKUS WISTAR

		Descriptives							
		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Kolesterol total pre (mmol/l)	1	7	2.9229	.08301	.03137	2.8461	2.9996	2.79	3.00
	2	7	4.5757	.20436	.07724	4.3867	4.7647	4.20	4.84
	3	7	4.5943	.20951	.07919	4.4005	4.7881	4.33	4.95
	4	7	4.6986	.07515	.02840	4.6291	4.7681	4.62	4.80
	Total	28	4.1979	.76553	.14467	3.9010	4.4947	2.79	4.95
Kolesterol total post (mmol/L)	1	7	2.7329	.07041	.02661	2.6677	2.7980	2.66	2.86
	2	7	4.7857	.29506	.11152	4.5128	5.0586	4.32	5.12
	3	7	4.3200	.17851	.06747	4.1549	4.4851	4.10	4.65
	4	7	3.0557	.13352	.05047	2.9322	3.1792	2.81	3.22
	Total	28	3.7236	.88674	.16758	3.3797	4.0674	2.66	5.12
Trigliserida Pre (mg/dl)	1	7	96.1200	5.40761	2.04388	91.1188	101.1212	90.40	103.26
	2	7	155.4043	17.65384	6.67252	139.0772	171.7314	124.27	173.95
	3	7	154.2414	25.93743	9.80343	130.2533	178.2295	123.57	195.99
	4	7	158.6557	37.31951	14.10545	124.1409	193.1705	105.02	191.67

	Total	28	141.1054	35.17120	6.64673	127.4674	154.7433	90.40	195.99
Triglicerida	1	7	63.2371	1.58290	.59828	61.7732	64.7011	61.59	65.51
Post (mg/dl)	2	7	157.2814	17.88916	6.76147	140.7367	173.8261	123.24	173.21
	3	7	145.9971	23.88279	9.02685	123.9092	168.0850	118.99	184.52
	4	7	65.2214	1.15686	.43725	64.1515	66.2913	63.99	66.88
	Total	28	107.9343	46.86803	8.85723	89.7608	126.1078	61.59	184.52
LDL Pre (mg/dl)	1	7	47.7986	2.63607	.99634	45.3606	50.2365	43.52	50.88
	2	7	108.9943	4.13315	1.56218	105.1718	112.8168	104.21	115.42
	3	7	106.5800	7.98371	3.01756	99.1963	113.9637	91.90	117.36
	4	7	108.5371	3.77310	1.42610	105.0476	112.0267	103.96	113.39
	Total	28	92.9775	27.00183	5.10287	82.5073	103.4477	43.52	117.36
LDL Post (mg/dl)	1	7	23.7500	3.54776	1.34093	20.4689	27.0311	20.06	28.82
	2	7	110.2286	2.53059	.95647	107.8882	112.5690	107.49	114.81
	3	7	89.1371	5.42529	2.05057	84.1196	94.1547	82.44	97.41
	4	7	26.8843	3.32182	1.25553	23.8121	29.9565	22.04	31.44
	Total	28	62.5000	38.80622	7.33369	47.4525	77.5475	20.06	114.81
HDL Pre (mg/dl)	1	7	48.4371	2.46721	.93252	46.1554	50.7189	44.57	51.61
	2	7	33.4914	1.47407	.55715	32.1281	34.8547	32.12	36.36
	3	7	33.5671	1.45539	.55009	32.2211	34.9132	31.23	35.22
	4	7	32.4100	2.28967	.86541	30.2924	34.5276	29.52	35.14
	Total	28	36.9764	7.00663	1.32413	34.2595	39.6933	29.52	51.61
HDL Post mg/dl)	1	7	50.2714	3.09310	1.16908	47.4108	53.1321	43.56	52.46
	2	7	24.3643	1.37168	.51844	23.0957	25.6329	22.34	26.81
	3	7	37.0400	1.12454	.42504	36.0000	38.0800	35.06	38.41
	4	7	46.5286	3.19619	1.20805	43.5726	49.4846	43.34	51.65
	Total	28	39.5511	10.43758	1.97252	35.5038	43.5983	22.34	52.46

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Kolesterol total pre (mmol/l)	2.775	3	24	.063
Kolesterol total post (mmol/L)	3.885	3	24	.055
Trigliserida Pre (mg/dl)	5.824	3	24	.054
Trigliserida Post (mg/dl)	9.599	3	24	.060
LDL Pre (mg/dl)	1.678	3	24	.198
LDL Post (mg/dl)	1.906	3	24	.156
HDL Pre (mg/dl)	1.715	3	24	.191
HDL Post (mg/dl)	2.132	3	24	.123

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Kolesterol total pre (mmol/l)	Between Groups	15.234	3	5.078	206.852	.000
	Within Groups	.589	24	.025		
	Total	15.823	27			
Kolesterol total post (mmol/L)	Between Groups	20.380	3	6.793	191.747	.000
	Within Groups	.850	24	.035		
	Total	21.230	27			
Trigliserida Pre (mg/dl)	Between Groups	18960.992	3	6320.331	10.506	.000
	Within Groups	14438.377	24	601.599		
	Total	33399.368	27			
Trigliserida Post (mg/dl)	Between Groups	53943.010	3	17981.003	80.429	.000
	Within Groups	5365.520	24	223.563		
	Total	59308.531	27			
LDL Pre (mg/dl)	Between Groups	19073.625	3	6357.875	249.310	.000
	Within Groups	612.046	24	25.502		
	Total	19685.671	27			

LDL Post (mg/dl)	Between Groups	40303.169	3	13434.390	903.780	.000
	Within Groups	356.752	24	14.865		
	Total	40659.921	27			
HDL Pre (mg/dl)	Between Groups	1231.781	3	410.594	105.140	.000
	Within Groups	93.725	24	3.905		
	Total	1325.505	27			
HDL Post (mg/dl)	Between Groups	2803.889	3	934.630	163.048	.000
	Within Groups	137.574	24	5.732		
	Total	2941.462	27			

Multiple Comparisons

LSD

Dependent Variable	(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Kolesterol total pre (mmol/l)	1	2	-1.65286*	.08375	.000	-1.8257	-1.4800
		3	-1.67143*	.08375	.000	-1.8443	-1.4986
		4	-1.77571*	.08375	.000	-1.9486	-1.6029
	2	1	1.65286*	.08375	.000	1.4800	1.8257
		3	-.01857	.08375	.826	-.1914	.1543
		4	-.12286	.08375	.155	-.2957	.0500
	3	1	1.67143*	.08375	.000	1.4986	1.8443
		2	.01857	.08375	.826	-.1543	.1914
		4	-.10429	.08375	.225	-.2771	.0686
	4	1	1.77571*	.08375	.000	1.6029	1.9486
		2	.12286	.08375	.155	-.0500	.2957
		3	.10429	.08375	.225	-.0686	.2771
Kolesterol total	1	2	-2.05286*	.10061	.000	-2.2605	-1.8452

post (mmol/L)	3	3	-1.58714 ⁺	.10061	.000	-1.7948	-1.3795
		4	-.32286 ⁺	.10061	.004	-.5305	-.1152
	2	1	2.05286 ⁺	.10061	.000	1.8452	2.2605
		3	.46571 ⁺	.10061	.000	.2581	.6734
		4	1.73000 ⁺	.10061	.000	1.5224	1.9376
	3	1	1.58714 ⁺	.10061	.000	1.3795	1.7948
		2	-.46571 ⁺	.10061	.000	-.6734	-.2581
		4	1.26429 ⁺	.10061	.000	1.0566	1.4719
	4	1	.32286 ⁺	.10061	.004	.1152	.5305
		2	-1.73000 ⁺	.10061	.000	-1.9376	-1.5224
		3	-1.26429 ⁺	.10061	.000	-1.4719	-1.0566
	Triglicerida Pre (mg/dl)	1	2	-59.28429 ⁺	13.11051	.000	-86.3430
3			-58.12143 ⁺	13.11051	.000	-85.1802	-31.0627
4			-62.53571 ⁺	13.11051	.000	-89.5945	-35.4770
2		1	59.28429 ⁺	13.11051	.000	32.2255	86.3430
		3	1.16286	13.11051	.930	-25.8959	28.2216
		4	-3.25143	13.11051	.806	-30.3102	23.8073
3		1	58.12143 ⁺	13.11051	.000	31.0627	85.1802
		2	-1.16286	13.11051	.930	-28.2216	25.8959
		4	-4.41429	13.11051	.739	-31.4730	22.6445
4		1	62.53571 ⁺	13.11051	.000	35.4770	89.5945
		2	3.25143	13.11051	.806	-23.8073	30.3102
		3	4.41429	13.11051	.739	-22.6445	31.4730
Triglicerida Post (mg/dl)	1	2	-94.04429 ⁺	7.99220	.000	-110.5394	-77.5492
		3	-82.76000 ⁺	7.99220	.000	-99.2551	-66.2649
		4	-1.98429	7.99220	.806	-18.4794	14.5108
	2	1	94.04429 ⁺	7.99220	.000	77.5492	110.5394
		3	11.28429	7.99220	.171	-5.2108	27.7794

		4	92.06000 ⁺	7.99220	.000	75.5649	108.5551
	3	1	82.76000 ⁺	7.99220	.000	66.2649	99.2551
		2	-11.28429	7.99220	.171	-27.7794	5.2108
		4	80.77571 ⁺	7.99220	.000	64.2806	97.2708
	4	1	1.98429	7.99220	.806	-14.5108	18.4794
		2	-92.06000 ⁺	7.99220	.000	-108.5551	-75.5649
		3	-80.77571 ⁺	7.99220	.000	-97.2708	-64.2806
LDL Pre (mg/dl)	1	2	-61.19571 ⁺	2.69931	.000	-66.7668	-55.6246
		3	-58.78143 ⁺	2.69931	.000	-64.3525	-53.2103
		4	-60.73857 ⁺	2.69931	.000	-66.3097	-55.1675
	2	1	61.19571 ⁺	2.69931	.000	55.6246	66.7668
		3	2.41429	2.69931	.380	-3.1568	7.9854
		4	.45714	2.69931	.867	-5.1140	6.0282
	3	1	58.78143 ⁺	2.69931	.000	53.2103	64.3525
		2	-2.41429	2.69931	.380	-7.9854	3.1568
		4	-1.95714	2.69931	.475	-7.5282	3.6140
	4	1	60.73857 ⁺	2.69931	.000	55.1675	66.3097
		2	-.45714	2.69931	.867	-6.0282	5.1140
		3	1.95714	2.69931	.475	-3.6140	7.5282
LDL Post (mg/dl)	1	2	-86.47857 ⁺	2.06084	.000	-90.7319	-82.2252
		3	-65.38714 ⁺	2.06084	.000	-69.6405	-61.1338
		4	-3.13429	2.06084	.141	-7.3876	1.1191
	2	1	86.47857 ⁺	2.06084	.000	82.2252	90.7319
		3	21.09143 ⁺	2.06084	.000	16.8381	25.3448
		4	83.34429 ⁺	2.06084	.000	79.0909	87.5976
	3	1	65.38714 ⁺	2.06084	.000	61.1338	69.6405
		2	-21.09143 ⁺	2.06084	.000	-25.3448	-16.8381
		4	62.25286 ⁺	2.06084	.000	57.9995	66.5062

	4	1	3.13429	2.06084	.141	-1.1191	7.3876
		2	-83.34429*	2.06084	.000	-87.5976	-79.0909
		3	-62.25286*	2.06084	.000	-66.5062	-57.9995
HDL Pre (mg/dl)	1	2	14.94571*	1.05630	.000	12.7656	17.1258
		3	14.87000*	1.05630	.000	12.6899	17.0501
		4	16.02714*	1.05630	.000	13.8470	18.2072
	2	1	-14.94571*	1.05630	.000	-17.1258	-12.7656
		3	-.07571	1.05630	.943	-2.2558	2.1044
		4	1.08143	1.05630	.316	-1.0987	3.2615
	3	1	-14.87000*	1.05630	.000	-17.0501	-12.6899
		2	.07571	1.05630	.943	-2.1044	2.2558
		4	1.15714	1.05630	.284	-1.0230	3.3372
	4	1	-16.02714*	1.05630	.000	-18.2072	-13.8470
		2	-1.08143	1.05630	.316	-3.2615	1.0987
		3	-1.15714	1.05630	.284	-3.3372	1.0230
HDL Post (mg/dl)	1	2	25.90714*	1.27976	.000	23.2658	28.5484
		3	13.23143*	1.27976	.000	10.5901	15.8727
		4	3.74286*	1.27976	.007	1.1016	6.3842
	2	1	-25.90714*	1.27976	.000	-28.5484	-23.2658
		3	-12.67571*	1.27976	.000	-15.3170	-10.0344
		4	-22.16429*	1.27976	.000	-24.8056	-19.5230
	3	1	-13.23143*	1.27976	.000	-15.8727	-10.5901
		2	12.67571*	1.27976	.000	10.0344	15.3170
		4	-9.48857*	1.27976	.000	-12.1299	-6.8473
	4	1	-3.74286*	1.27976	.007	-6.3842	-1.1016
		2	22.16429*	1.27976	.000	19.5230	24.8056
		3	9.48857*	1.27976	.000	6.8473	12.1299

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

2. HASIL UJI PAIRED SAMPLE T TEST PROFIL LIPID TIKUS WISTAR SUPLEMENTASI ECTA (MINGGU 8 VS MINGGU 16)

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Kolesterol Total KN Pre (mg/dl) - Kolesterol Total KN Post (mg/dl)	7.35000	3.68153	1.39149	3.94515	10.75485	5.282	6	.002
Pair 2	Kolesterol Total KP Pre (mg/dl) - Kolesterol Total KP Post (mg/dl)	-8.12714	14.53987	5.49555	-21.57428	5.31999	-1.479	6	.190
Pair 3	Kolesterol Total ECTA1 Pre (mg/dl) - Kolesterol Total ECTA1 Post (mg/dl)	10.56143	1.66611	.62973	9.02054	12.10232	16.771	6	.000
Pair 4	Kolesterol Total ECTA2 Pre (mg/dl) - Kolesterol Total ECTA2 Post (mg/dl)	63.57000	5.00236	1.89072	58.94359	68.19641	33.622	6	.000
Pair 5	Trigliserida KN Pre (mg/dl) - Trigliserida KN Post (mg/dl)	32.88286	6.66269	2.51826	26.72090	39.04481	13.058	6	.000
Pair 6	Trigliserida KP Pre (mg/dl) - Trigliserida KP Post (mg/dl)	-1.87714	3.07622	1.16270	-4.72217	.96789	-1.614	6	.158
Pair 7	Trigliserida ECTA1 Pre (mg/dl) - Trigliserida ECTA1 Post (mg/dl)	8.24429	4.21883	1.59457	4.34251	12.14606	5.170	6	.002
Pair 8	Trigliserida ECTA2 Pre (mg/dl) - Trigliserida ECTA2 Post (mg/dl)	93.43429	36.57890	13.82553	59.60444	127.26413	6.758	6	.001
Pair 9	LDL KN Pre (mg/dl) - LDL KN Post (mg/dl)	24.04857	5.66200	2.14003	18.81209	29.28505	11.237	6	.000
Pair 10	LDL KP Pre (mg/dl) - LDL KP Post (mg/dl)	-1.23429	4.49188	1.69777	-5.38858	2.92001	-.727	6	.495
Pair 11	LDL ECTA1 Pre (mg/dl) - LDL ECTA1 Post (mg/dl)	17.44286	7.35362	2.77941	10.64189	24.24383	6.276	6	.001
Pair 12	LDL ECTA2 Pre (mg/dl) - LDL ECTA2 Post (mg/dl)	81.65286	5.44119	2.05658	76.62059	86.68512	39.703	6	.000

Pair 13	HDL KN Pre (mg/dl) - HDL KN Post (mg/dl)	-1.83429	4.29261	1.62245	-5.80428	2.13571	-1.131	6	.301
Pair 14	HDL KP Pre (mg/dl) - HDL KP Post (mg/dl)	9.12714	2.31967	.87675	6.98180	11.27248	10.410	6	.000
Pair 15	HDL ECTA1 Pre (mg/dl) - HDL ECTA1 Post (mg/dl)	-3.47286	1.22271	.46214	-4.60368	-2.34204	-7.515	6	.000
Pair 16	HDL ECTA2 Pre (mg/dl) - HDL ECTA2 Post (mg/dl)	-14.11857	3.74233	1.41447	-17.57965	-10.65750	-9.982	6	.000

LAMPIRAN 16. HASIL UJI STATISTIK KADAR KALSIMUM SERUM DAN VITAMIN D TIKUS WISTAR

1. HASIL UJI ANOVA KALSIMUM SERUM, VITAMIN D TIKUS WISTAR SEBELUM DAN SESUDAH SUPLEMENTASI ECTA

		Descriptives							
		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Kalsium serum pre (mg/dl)	1	7	8.6229	.07994	.03021	8.5489	8.6968	8.55	8.78
	2	7	8.4471	.14671	.05545	8.3115	8.5828	8.15	8.54
	3	7	8.4686	.13801	.05216	8.3409	8.5962	8.21	8.60
	4	7	8.4900	.04546	.01718	8.4480	8.5320	8.41	8.54
	Total	28	8.5071	.12555	.02373	8.4585	8.5558	8.15	8.78
Kalsium serum post (mg/dl)	1	7	8.5486	.27468	.10382	8.2945	8.8026	8.02	8.95
	2	7	8.3743	.18054	.06824	8.2073	8.5413	8.12	8.62
	3	7	9.0757	.28588	.10805	8.8113	9.3401	8.83	9.57
	4	7	9.3986	.17809	.06731	9.2339	9.5633	9.06	9.60
	Total	28	8.8493	.47188	.08918	8.6663	9.0323	8.02	9.60
Vitamin D pre (ng/ml)	1	7	31.8807	1.09066	.41223	30.8720	32.8894	30.27	33.69
	2	7	30.8740	1.03527	.39129	29.9165	31.8315	29.55	32.38

	3	7	30.9019	1.22954	.46472	29.7647	32.0390	29.41	32.34
	4	7	31.0090	1.16595	.44069	29.9307	32.0873	29.42	32.57
	Total	28	31.1664	1.14873	.21709	30.7210	31.6118	29.41	33.69
Vitamin D post (ng/ml)	1	7	31.5213	1.04619	.39542	30.5537	32.4888	30.12	33.23
	2	7	29.6321	.96288	.36394	28.7416	30.5227	28.24	30.51
	3	7	31.6411	.93881	.35484	30.7729	32.5094	30.15	33.15
	4	7	32.1020	1.10889	.41912	31.0764	33.1276	30.26	33.53
	Total	28	31.2241	1.35765	.25657	30.6977	31.7506	28.24	33.53
Persen Delta Kalsium Serum (%)	1	7	-.8743	2.77183	1.04765	-3.4378	1.6892	-6.87	1.95
	2	7	-.8386	2.22207	.83987	-2.8936	1.2165	-3.72	2.09
	3	7	7.2086	4.57948	1.73088	2.9733	11.4439	3.37	16.57
	4	7	10.7029	1.63622	.61843	9.1896	12.2161	7.73	12.67
	Total	28	4.0496	5.88250	1.11169	1.7686	6.3306	-6.87	16.57
Persen Delta Vit.D (%)	1	7	-1.1113	1.73909	.65731	-2.7197	.4971	-3.91	1.65
	2	7	-4.0157	.98832	.37355	-4.9298	-3.1017	-5.75	-2.94
	3	7	2.4743	3.48034	1.31545	-.7445	5.6931	-1.45	6.78
	4	7	3.5427	1.43085	.54081	2.2194	4.8660	1.07	5.54
	Total	28	.2225	3.65056	.68989	-1.1930	1.6380	-5.75	6.78

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Kalsium serum pre (mg/dl)	2.332	3	24	.100
Kalsium serum post (mg/dl)	.603	3	24	.619
Vitamin D pre (ng/ml)	.246	3	24	.864
Vitamin D post (ng/ml)	.052	3	24	.984
Persen Delta Kalsium Serum (%)	1.415	3	24	.263

Persen Delta Vit.D (%)	8.635	3	24	.053
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ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Kalsium serum pre (mg/dl)	Between Groups	.131	3	.044	3.573	.029
	Within Groups	.294	24	.012		
	Total	.426	27			
Kalsium serum post (mg/dl)	Between Groups	4.683	3	1.561	28.193	.000
	Within Groups	1.329	24	.055		
	Total	6.012	27			
Vitamin D pre (ng/ml)	Between Groups	4.834	3	1.611	1.256	.312
	Within Groups	30.795	24	1.283		
	Total	35.629	27			
Vitamin D post (ng/ml)	Between Groups	24.971	3	8.324	8.056	.001
	Within Groups	24.796	24	1.033		
	Total	49.767	27			
Persen Delta Kalsium Serum (%)	Between Groups	716.687	3	238.896	26.347	.000
	Within Groups	217.617	24	9.067		
	Total	934.304	27			
Persen Delta Vit.D (%)	Between Groups	250.851	3	83.617	18.416	.000
	Within Groups	108.968	24	4.540		
	Total	359.819	27			

Multiple Comparisons

LSD

Dependent Variable	(I) Kelompok perlakuan	(J) Kelompok perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Kalsium serum pre (mg/dl)	1	2	.17571*	.05918	.007	.0536	.2979
		3	.15429*	.05918	.015	.0321	.2764
		4	.13286*	.05918	.034	.0107	.2550
	2	1	-.17571*	.05918	.007	-.2979	-.0536
		3	-.02143	.05918	.720	-.1436	.1007
		4	-.04286	.05918	.476	-.1650	.0793
	3	1	-.15429*	.05918	.015	-.2764	-.0321
		2	.02143	.05918	.720	-.1007	.1436
		4	-.02143	.05918	.720	-.1436	.1007
	4	1	-.13286*	.05918	.034	-.2550	-.0107
		2	.04286	.05918	.476	-.0793	.1650
		3	.02143	.05918	.720	-.1007	.1436
Kalsium serum post (mg/dl)	1	2	.17429	.12578	.179	-.0853	.4339
		3	-.52714*	.12578	.000	-.7867	-.2675
		4	-.85000*	.12578	.000	-1.1096	-.5904
	2	1	-.17429	.12578	.179	-.4339	.0853
		3	-.70143*	.12578	.000	-.9610	-.4418
		4	-1.02429*	.12578	.000	-1.2839	-.7647
	3	1	.52714*	.12578	.000	.2675	.7867
		2	.70143*	.12578	.000	.4418	.9610
		4	-.32286*	.12578	.017	-.5825	-.0633
4	1	.85000*	.12578	.000	.5904	1.1096	
	2	1.02429*	.12578	.000	.7647	1.2839	

		3	.32286*	.12578	.017	.0633	.5825
Vitamin D pre (ng/ml)	1	2	1.00671	.60548	.109	-.2429	2.2564
		3	.97886	.60548	.119	-.2708	2.2285
		4	.87171	.60548	.163	-.3779	2.1214
	2	1	-1.00671	.60548	.109	-2.2564	.2429
		3	-.02786	.60548	.964	-1.2775	1.2218
		4	-.13500	.60548	.825	-1.3847	1.1147
	3	1	-.97886	.60548	.119	-2.2285	.2708
		2	.02786	.60548	.964	-1.2218	1.2775
		4	-.10714	.60548	.861	-1.3568	1.1425
	4	1	-.87171	.60548	.163	-2.1214	.3779
		2	.13500	.60548	.825	-1.1147	1.3847
		3	.10714	.60548	.861	-1.1425	1.3568
Vitamin D post (ng/ml)	1	2	1.88914*	.54331	.002	.7678	3.0105
		3	-.11986	.54331	.827	-1.2412	1.0015
		4	-.58071	.54331	.296	-1.7021	.5406
	2	1	-1.88914*	.54331	.002	-3.0105	-.7678
		3	-2.00900*	.54331	.001	-3.1303	-.8877
		4	-2.46986*	.54331	.000	-3.5912	-1.3485
	3	1	.11986	.54331	.827	-1.0015	1.2412
		2	2.00900*	.54331	.001	.8877	3.1303
		4	-.46086	.54331	.405	-1.5822	.6605
	4	1	.58071	.54331	.296	-.5406	1.7021
		2	2.46986*	.54331	.000	1.3485	3.5912
		3	.46086	.54331	.405	-.6605	1.5822
Persen Delta Kalsium Serum (%)	1	2	-.03571	1.60956	.982	-3.3577	3.2863
		3	-8.08286*	1.60956	.000	-11.4048	-4.7609
		4	-11.57714*	1.60956	.000	-14.8991	-8.2552

	2	1	.03571	1.60956	.982	-3.2863	3.3577
		3	-8.04714*	1.60956	.000	-11.3691	-4.7252
		4	-11.54143*	1.60956	.000	-14.8634	-8.2195
	3	1	8.08286*	1.60956	.000	4.7609	11.4048
		2	8.04714*	1.60956	.000	4.7252	11.3691
		4	-3.49429*	1.60956	.040	-6.8163	-.1723
	4	1	11.57714*	1.60956	.000	8.2552	14.8991
		2	11.54143*	1.60956	.000	8.2195	14.8634
		3	3.49429*	1.60956	.040	.1723	6.8163
Persen Delta Vit.D (%)	1	2	2.90443*	1.13896	.018	.5537	5.2551
		3	-3.58557*	1.13896	.004	-5.9363	-1.2349
		4	-4.65400*	1.13896	.000	-7.0047	-2.3033
	2	1	-2.90443*	1.13896	.018	-5.2551	-.5537
		3	-6.49000*	1.13896	.000	-8.8407	-4.1393
		4	-7.55843*	1.13896	.000	-9.9091	-5.2077
	3	1	3.58557*	1.13896	.004	1.2349	5.9363
		2	6.49000*	1.13896	.000	4.1393	8.8407
		4	-1.06843	1.13896	.358	-3.4191	1.2823
	4	1	4.65400*	1.13896	.000	2.3033	7.0047
		2	7.55843*	1.13896	.000	5.2077	9.9091
		3	1.06843	1.13896	.358	-1.2823	3.4191

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

2. HASIL UJI PAIRED SAMPLE T TEST KALSIMUM SERUM, VITAMIN D TIKUS WISTAR SEBELUM DAN SESUDAH SUPLEMENTASI ECTA

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	Kalsium serum KN pre (mg/dl) - Kalsium serum KN post (mg/dl)	.07429	.23867	.09021	-.14644	.29502	.823	6	.442
Pair 2	Kalsium serum KP pre (mg/dl) - Kalsium serum KP post (mg/dl)	.07286	.18918	.07150	-.10211	.24782	1.019	6	.348
Pair 3	Kalsium serum ECTA1 pre (mg/dl) - Kalsium serum ECTA1 post (mg/dl)	-.60714	.37223	.14069	-.95140	-.26289	-4.315	6	.005
Pair 4	Kalsium serum ECTA2 pre (mg/dl) - Kalsium serum ECTA2 post (mg/dl)	-.90857	.14194	.05365	-1.03985	-.77730	-16.935	6	.000
Pair 5	Vitamin D KN pre (ng/ml) - Vitamin D KN post (ng/ml)	.35943	.54287	.20519	-.14265	.86150	1.752	6	.130
Pair 6	Vitamin D KP pre (ng/ml) - Vitamin D KP post (ng/ml)	1.24186	.32492	.12281	.94136	1.54236	10.112	6	.000
Pair 7	Vitamin D ECAT1 pre (ng/ml) - Vitamin D ECTA1 post (ng/ml)	-.73929	1.04817	.39617	-1.70868	.23011	-1.866	6	.111
Pair 8	Vitamin D ECTA2 pre (ng/ml) - Vitamin D ECTA2 post (ng/ml)	-1.09300	.42868	.16203	-1.48946	-.69654	-6.746	6	.001

LAMPIRAN 17. Pembuatan Dan Perhitungan Kebutuhan Bahan Ekstrak Tepung Cangkang Telur Ayam Ras (ECTA)

I. Pembuatan tepung cangkang telur ayam ras

Bahan : 1000 gr cangkang telur ayam ras, aquadest

Alat : Baskom, panci stainless steel, kompor gas, nampan stainless steel, blender, ayakan 80 mesh, toples kaca berpenutup

Cara kerja :

1. Cangkang telur ayam ras seberat 1 kg yang diperoleh dari rumah makan, dibersihkan menggunakan air mengalir, lalu direbus dengan aquadest selama 15 menit.
2. Ditiriskan kemudian disebar di atas kaca atau loyang stainless steel dan keringkan semalam.
3. Pagi hari, cangkang telur ayam ras dikeringkan di oven pada suhu 200°C selama 10 menit, didinginkan, ditimbang beratnya, diperoleh hasil 750 g.
4. Kemudian cangkang telur ayam ras dihaluskan menggunakan blender, disaring dengan saringan 80 mesh, ditimbang diperoleh simplisia seberat 646,18 g, kemudian dibagi 2 untuk 2 perlakuan ekstraksi menggunakan pelarut HCl 4% dan CH₃COOH 2.

II. Ekstraksi sampel menggunakan pelarut HCl 4%

Proses selanjutnya adalah ekstraksi sampel (simplisia), metode maserasi menggunakan pelarut asam klorida (HCl) 4% (w/v), selama 3 jam. Perbandingan simplisia tepung cangkang telur ayam ras dengan HCl adalah 1:15 (w/v).

Dari simplisia seberat 646,18 g, diambil seberat 300 g untuk proses maserasi.

1 g simplisia : 15 ml HCl 4% = 300 g : 4500 ml HCl 4% dimaserasi selama 3 jam. Endapan disaring menggunakan kertas saring whattman, kemudian dikeringkan menggunakan oven suhu 115°C selama 3 jam, dinginkan, disaring dengan saringan 80 mesh, maserat yang diperoleh ditimbang = 243,72 g

Besarnya rendemen dihitung berdasarkan persentase berat ekstrak cangkang telur ayam ras dibagi berat simplisia, kemudian dikali seratus persen. Rendemen ditentukan dengan rumus:

$$\text{Rendemen (\%)} = \frac{\text{Berat ekstrak (g)}}{\text{Berat simplisia (g)}} \times 100\% = \frac{243,72}{300} \times 100\% = 81,24\%$$

Pembuatan ECTA untuk suplementasi pada hewan coba

Bahan : Simplisia tepung cangkang telur ayam ras 200 g, 3 liter HCl 4%

Alat : Lemari asam, oven listrik, timbangan analitik, blender, gelas piala 1 liter, batang gelas pengaduk, kertas saring whatman, corong gelas, spatula, gelas ukur, pipet, kertas saring, saringan 80 mesh, toples gelas berpenutup.

Cara kerja :

Proses ekstraksi cangkang telur ayam ras menggunakan larutan asam klorida, akan menghasilkan gas CO₂ (gelembung udara) yang cukup banyak, sehingga pengerjaan ekstraksi sampel dilakukan 4 kali pengerjaan secara paralel (waktu bersamaan), sehingga semua bahan dibagi 4.

1. Timbang tepung cangkang telur ayam ras sebanyak 50 gr dimasukkan ke dalam gelas piala 1000 ml
2. Secara perlahan-lahan ditambahkan pelarut asam klorida (HCl) 4% (w/v) sebanyak 0,75 liter sampai permukaan sampel terendam semuanya.
3. Lakukan pengadukan larutan secara perlahan, jika gelembung gas CO₂ banyak terbentuk.
4. Selanjutnya endapan disaring menggunakan kertas saring, diperoleh supernatan atau maserat.
5. Untuk menghilangkan residu dan larutan HCl dari maserat (sesudah dihidrolisis), dilakukan pemanasan pada oven suhu 110-115°C sampai kering (3 jam).
6. Setelah agak dingin maserat kemudian di haluskan menggunakan blender, lalu disaring (80 mesh), dikemas dengan kemasan kedap udara.

1 g simplisia : 15 ml HCl 4% = 200 g : 3000 ml HCl 4% dimaserasi selama 3 jam, dikeringkan 3 jam, dihaluskan, ditimbang, maserat yang diperoleh = 162,48 g

$$\text{Rendemen (\%)} = \frac{\text{Berat ekstrak (g)}}{\text{Berat simplisia (g)}} \times 100\% = \frac{162,48}{200} \times 100\% = 81,24\%$$

PERHITUNGAN KEBUTUHAN BAHAN ECTA

I. Perhitungan Kebutuhan ekstrak tepung cangkang telur ayam ras (ECTA) untuk suplementasi tikus obesitas pada perlakuan I dan II selama 2 bulan

Hasil perhitungan konversi dosis kalsium pada tikus 200 gr adalah sebagai berikut:

Dosis 1 (dosis rendah) = Dosis Lazim x Faktor Konversi

$$= (500 \times 0,018) \text{ mg} = 9 \text{ mg} / 200 \text{ g BB (ECTA I)}$$

Dosis 2 (dosis tinggi) = $(1200 \times 0,018) \text{ mg} = 21,6 \text{ mg} / 200 \text{ g BB (ECTA II)}$

Dosis pemberian ekstrak cangkang telur ayam ras pada kelompok ECTA I dan ECTA II mengikuti perubahan rerata berat badan hewan coba yang dihitung setiap minggu. Pemberian ekstrak cangkang telur ayam ras pada tikus berbentuk suspensi masing-masing dalam larutan aquades 2 ml. Frekwensi pemberian sekali sehari sebelum makan dengan mencekok menggunakan sonde.

Estimasi perhitungan kebutuhan ekstrak tepung cangkang telur ayam ras untuk tikus obesitas pada perlakuan I dan II selama 2 bulan adalah :

Diketahui : $1 \text{ mg} = 0,001 \text{ gr}$

Cara perhitungan pembuatan larutan stok suspensi dapat dilihat pada contoh berikut ini.

Sebelum suplementasi ECTA rerata berat badan tikus kelompok ECTA I sebesar 275 g, maka berat ekstrak cangkang telur ayam ras yang ditimbang = $275 \text{ g} / 200 \text{ g} \times 9 \text{ mg} = 12,38 \text{ mg}$. Pada kelompok ECTA II rerata berat badan tikus 269 g, maka berat ECTA yang ditimbang = $269 \text{ g} / 200 \text{ g} \times 21,6 \text{ mg} = 29,05 \text{ mg}$.

Kelompok ECTA I sebanyak 7 ekor tikus, dosis ini diberikan dalam volume 2 ml per ekor per hari. Untuk memenuhi kebutuhan tersebut, maka dibuat persediaan (stok) perhari sebanyak $2 \text{ ml} \times 7 \text{ ekor} = 14 \text{ ml}$, untukantisipasi kekurangan larutan stok maka dibuat sebanyak 25 ml. Jumlah ECTA yang ditimbang untuk membuat larutan stok pada kelompok ECTA I sebanyak 25 ml perhari adalah = $25 \text{ ml} / 2 \text{ ml} \times 12,38 \text{ mg} = 154,75 \text{ mg}$. Persentasi (%) kadar ECTA I = $0,155 \text{ g} / 25 \text{ ml} \times 100 \% = 0,62\%$.

Kelompok ECTA II sebanyak 7 ekor tikus, dosis ini diberikan dalam volume 2 ml per ekor per hari. Untuk persediaan (stok) perhari, dibuat sebanyak 25 ml. Jumlah ECTA yang ditimbang = $25 \text{ ml} / 2 \text{ ml} \times 29,05 \text{ mg} = 363,13 \text{ mg}$. Persentase (%) kadar kalsium ECTA II = $0,363 \text{ g} / 25 \text{ ml} \times 100 \% = 1,45\%$

Jumlah ECTA yang ditimbang untuk membuat larutan stok pada kelompok ECTA I sebanyak 25 ml perhari adalah = $25 \text{ ml} / 2 \text{ ml} \times 12,38 \text{ mg} = 154,75 \text{ mg/hari}$

Kebutuhan ECTA untuk perlakuan 1 selama 60 hari untuk 7 ekor tikus

$$= 154,75 \text{ mg/hari} \times 60 = 9.285 \text{ mg} = 9,285 \text{ g}$$

Kelompok ECTA II sebanyak 7ekor tikus, dosis ini diberikan dalam volume 2 ml per ekor per hari. Untuk persediaan (stok) perhari, dibuat sebanyak 25 ml. Jumlah ECTA yang ditimbang = $25 \text{ ml} / 2 \text{ ml} \times 29,05 \text{ mg} = 363,13 \text{ mg}$. Persentase (%) kadar kalsium ECTA II = $0,363 \text{ g} / 25 \text{ ml} \times 100 \% = 1,45\%$

Kebutuhan ECTA selama 60 hari untuk 7 ekor tikus pada perlakuan 2 adalah :

$$363,13 \text{ mg/hari} \times 60 \text{ hari} = 21.787,8 \text{ mg} = \mathbf{21,788 \text{ gr}}$$

Total kebutuhan ECTA perhari untuk 2 jenis perlakuan adalah :

$$154,75 \text{ mg/hari} + 363,13 \text{ mg/hari} = 517,88 \text{ mg}$$

Total kebutuhan ECTA untuk 2 jenis perlakuan selama 60 hari adalah :

$$9.285 \text{ mg} + 21.787,8 \text{ mg} = 31.073 \text{ mg} \text{ ----- } 31,073 \text{ g}$$

II. Perhitungan kebutuhan larutan HCl 4% untuk membuat ekstrak cangkang telur ayam ras (ECTA)

Perbandingan simplisia tepung cangkang telur ayam ras dengan HCl 4% adalah 1:15 (w/v), maka untuk membuat 31,073 g ECTA berapa ml HCl 4% yang dibutuhkan (1g ECTA : 15 ml HCl%)?

Diketahui : 1 ml = 0,001 lt dan 1 mg = 0,001 g

$$1 \text{ g} : 15 \text{ ml} = 31,073 \text{ g} : X \text{ } 1 \text{ g} \times X = 466,5 \text{ ml} \text{ } X = 466,5 \text{ ml}$$

$$1 \text{ g} : 15 \text{ ml} = 31,073 \text{ g ECTA} : 466,5 \text{ ml HCl } 4\%$$

Jadi untuk membuat 31,073 g ekstrak cangkang telur ayam ras dibutuhkan 466,5 ml HCl 4%

Untuk membuat 200 g ECTA dibutuhkan berapa ml HCl 4% ?

$$\text{Jawab : } 31,073 : 466,5 = 200 : x \text{ ----- } 31,073 \times x = 93.300 \text{ ---- } x = 3.002 \text{ ml}$$

Untuk membuat 200 g ECTA dibutuhkan 3.002 ml atau 3 liter HCl 4%.

III. Cara perhitungan membuat larutan HCl 4% dari larutan pekat HCl 37%

Larutan adalah: campuran dua zat atau lebih yang terdiri dari zat terlarut dan pelarut.

Konsentrasi suatu zat dapat dinyatakan dalam beberapa besaran seperti mol, persen (%), berat/volume, molaritas, molalitas, part per million (ppm) atau fraksi mol. Konsentrasi menunjukkan jumlah zat terlarut dalam suatu satuan jumlah pelarut.

Diketahui : Larutan HCl 37% Ditanya : Cara membuat larutan HCl 4%

Jawab : Pembuatan larutan HCl 4% sebanyak 3000 ml dapat menggunakan larutan pekat HCl yang ada di pasaran (umumnya konsentrasinya 37%).

Gunakan prinsip pengenceran dengan menggunakan rumus : $V_1N_1 = V_2N_2$

indeks 1 untuk HCl 4% indeks 2 untuk HCl 37%

Sehingga didapatkan :

$$4\% \cdot 1 \text{ liter} = 37\% \cdot V_2 \quad \text{-----} \quad 0,04 \text{ liter} = 0,37V_2 \quad \dots V_2 = 0,108 \text{ liter} = 108 \text{ ml}$$

Jadi untuk mendapatkan larutan HCl 4% dari larutan pekat HCl 37% maka pipet sebanyak 108 ml HCl 37% lalu kita tambahkan aquadest sampai didapat volume 1000 ml.

IV. Cara membuat larutan asam asetat 2 N dari asam asetat glasial (murni)

Diketahui : massa jenis asam asetat glasial = 1,05 g/ml;

Berat Molekul (BM) = 60,05 g/mol ; Kemurnian = 100 % (Lihat pada botol)

Cara Membuat Larutan Asam Asetat 2 N (Normalitas) sebanyak 1000 ml

Karena elektron valensi asam asetat adalah 1 maka nilai 1 M asam asetat setara dengan 1 N.

Langkah awal yaitu mencari Normalitas asam asetat glasial (murni), dengan rumus :

$$M = (\text{massa jenis} \times 10 \times \%) \times \text{valensi} / \text{BM}$$

$$M = (1,05 \times 10 \times 100) \times 1 / 60,05$$

$$M = 17,5 \quad (\text{perlu diingat : Molaritas asam asetat murni})$$

Langkah kedua , untuk membuat asam asetat 2N dengan menggunakan rumus pengenceran :

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

$$17,5 \times V_1 = 2 \times 1000 \text{ ml} \quad \dots\dots V_1 = 2000/17,5 \quad \dots\dots V_1 = 114,285 \text{ ml}$$

Jadi asam asetat murni yang dibutuhkan sebanyak 114,3 ml

Cara Membuat :

1. Siapkan gelas piala 500 ml yang sebelumnya sudah diisi dengan aquadest

(200 ml)

2. Ambil asam asetat glasial (murni) sebanyak 114,3 ml kemudian masukkan dalam gelas piala yang telah diisi aquadest tadi.
3. Aduk hingga homogen, kemudian tuang larutan tersebut ke dalam labu takar ukuran 1000 ml, tambahkan dengan aquadest sampai tanda batas. Gojog hingga homogen.
4. Pindahkan larutan tersebut ke dalam botol reagen dan beri label.

V. Ekstraksi Tepung Cangkang Telur Ayam Ras Menggunakan Larutan Asam Asetat (CH_3COOH) 2 N (Yonata, Diode, et.al, 2017)

Bahan : Cangkang telur ayam ras 200 gr, aquadest, 400 ml asam asetat (CH_3COOH) 2 N, kemasan kedap udara (botol kaca bertutup atau plastik kedap udara)

Alat : Baskom, panci stainless steel, kompor gas, blender, water bath, ayakan 80 mesh, timbangan analitik,

Cara kerja :

1. Cangkang telur ayam ras seberat 200 g dicuci bersih, dilakukan pengecilan ukuran
2. Direbus dalam aquadest suhu 100°C selama 15 menit, angkat, tiriskan
3. Cangkang telur direndam di dalam *water bath* pada suhu 60°C selama 3 jam menggunakan pelarut asam asetat (CH_3COOH) 2 N, perbandingan cangkang : pelarut 1 : 2 (w/v).
4. Cangkang hasil perendaman didinginkan, dibersihkan menggunakan aquades.
5. Cangkang telur ayam ras yang telah dingin kemudian dipindahkan ke nampan pengering, dikeringkan menggunakan *cabinet dryer* pada suhu 50°C selama 3 jam.
6. Cangkang kering selanjutnya ditepungkan menggunakan blender, kemudian diayak (80 mesh), diperoleh hasil sebesar 150,66 g.
7. Timbang ekstrak cangkang telur ayam ras untuk pengukuran rendemen, kemas dengan kemasan kedap udara (botol kaca bertutup atau plastik kedap udara)

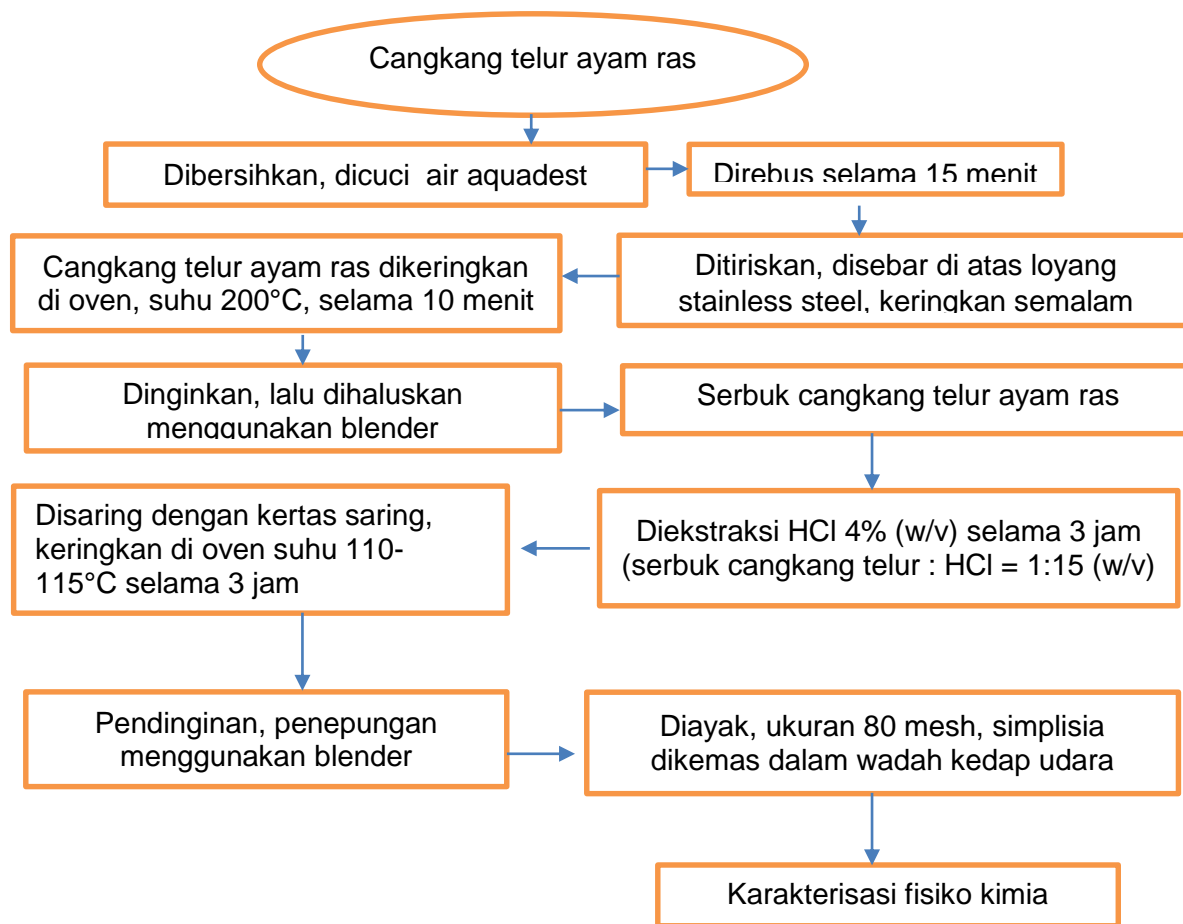
8. Analisis karakteristik kimia (kalsium karbonat, kadar air, abu, kalsium, dan fosfor)

Rendemen ditentukan dengan rumus :

$$\text{Rendemen (\%)} = \frac{\text{Berat ekstrak (g)}}{\text{Berat simplisia (g)}} \times 100\% = \frac{150,66}{200} \times 100\% = 75,33\%$$

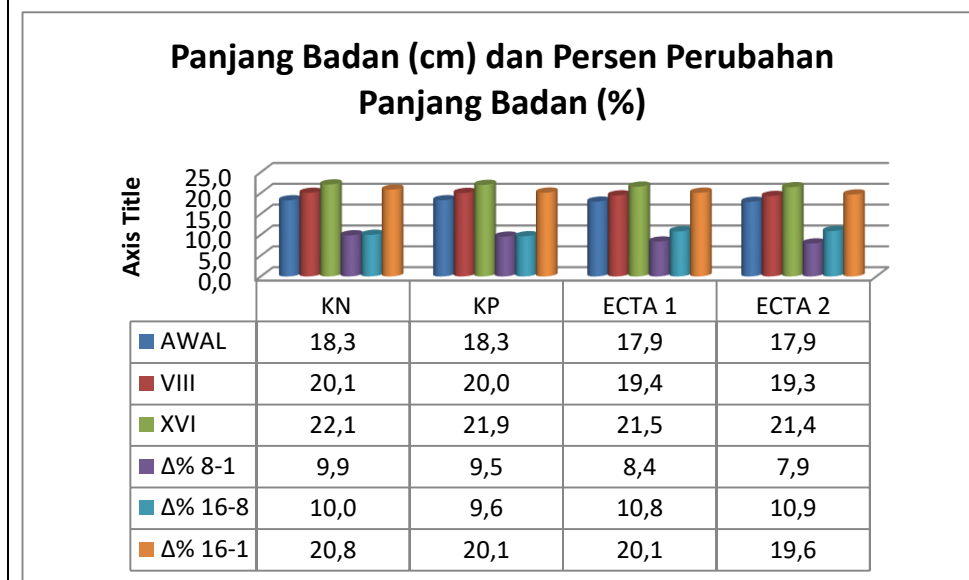
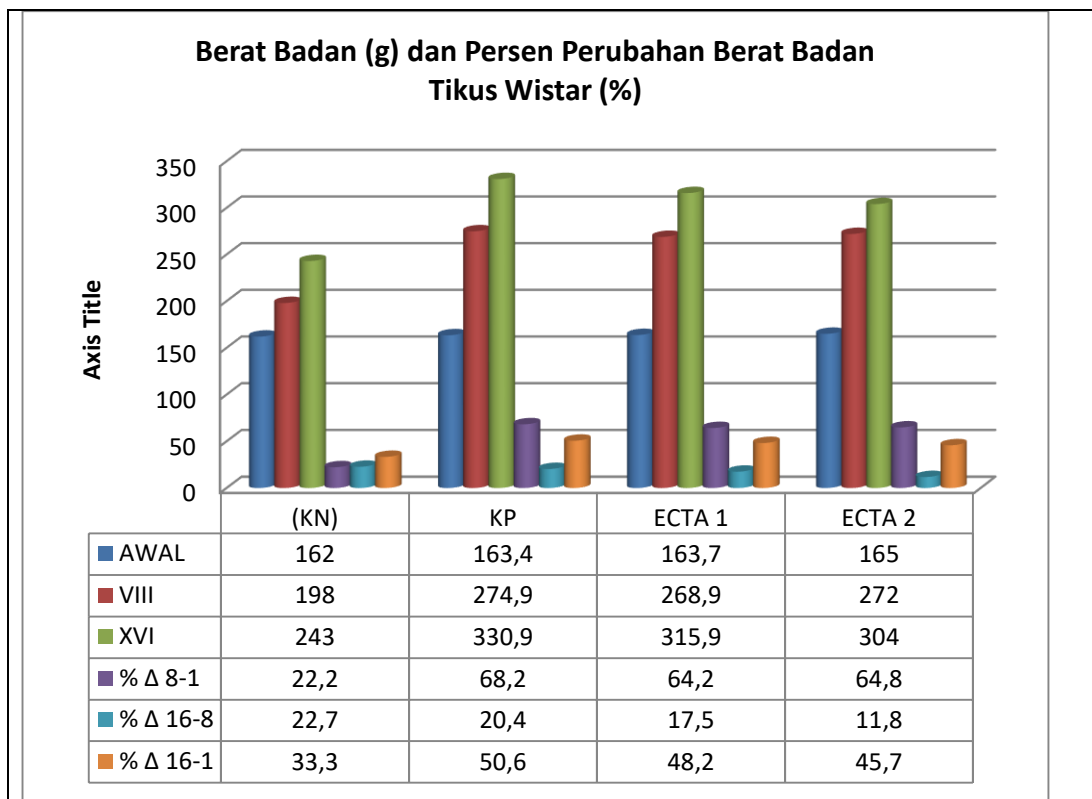
Hasil ekstraksi larutan CH_3COOH 2 N diperoleh **rendemen** 75,33%

Diagram Alir Pembuatan Ekstrak Tepung Cangkang Telur Ayam Ras

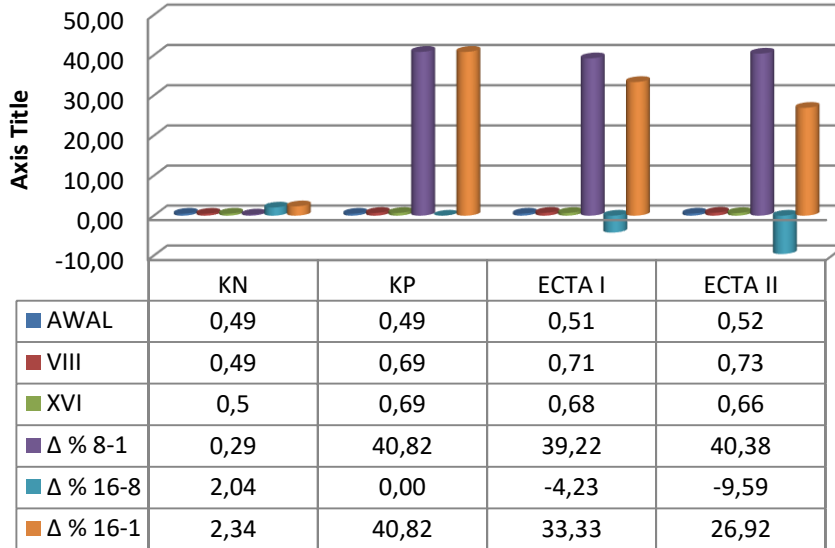


Gambar 20. Diagram Alir Pembuatan Ekstrak Tepung Cangkang Telur Ayam Ras

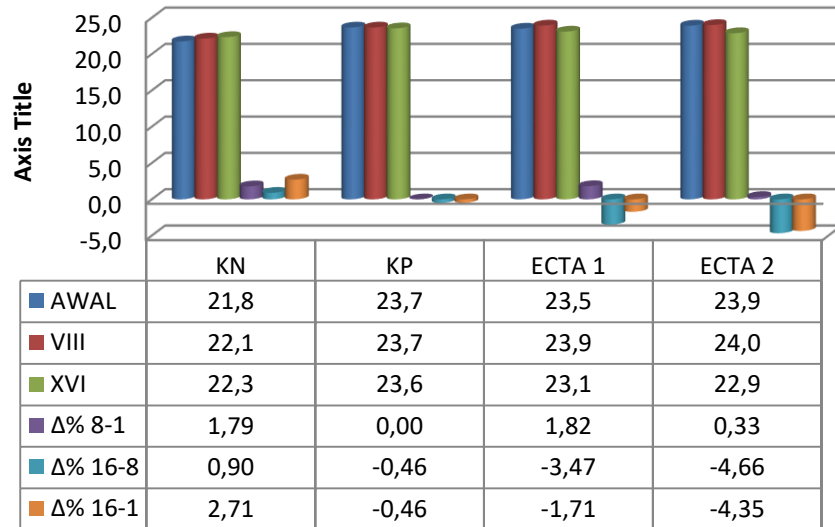
LAMPIRAN 18. HISTOGRAM PARAMETER ANTROPOMETRI TIKUS WISTAR



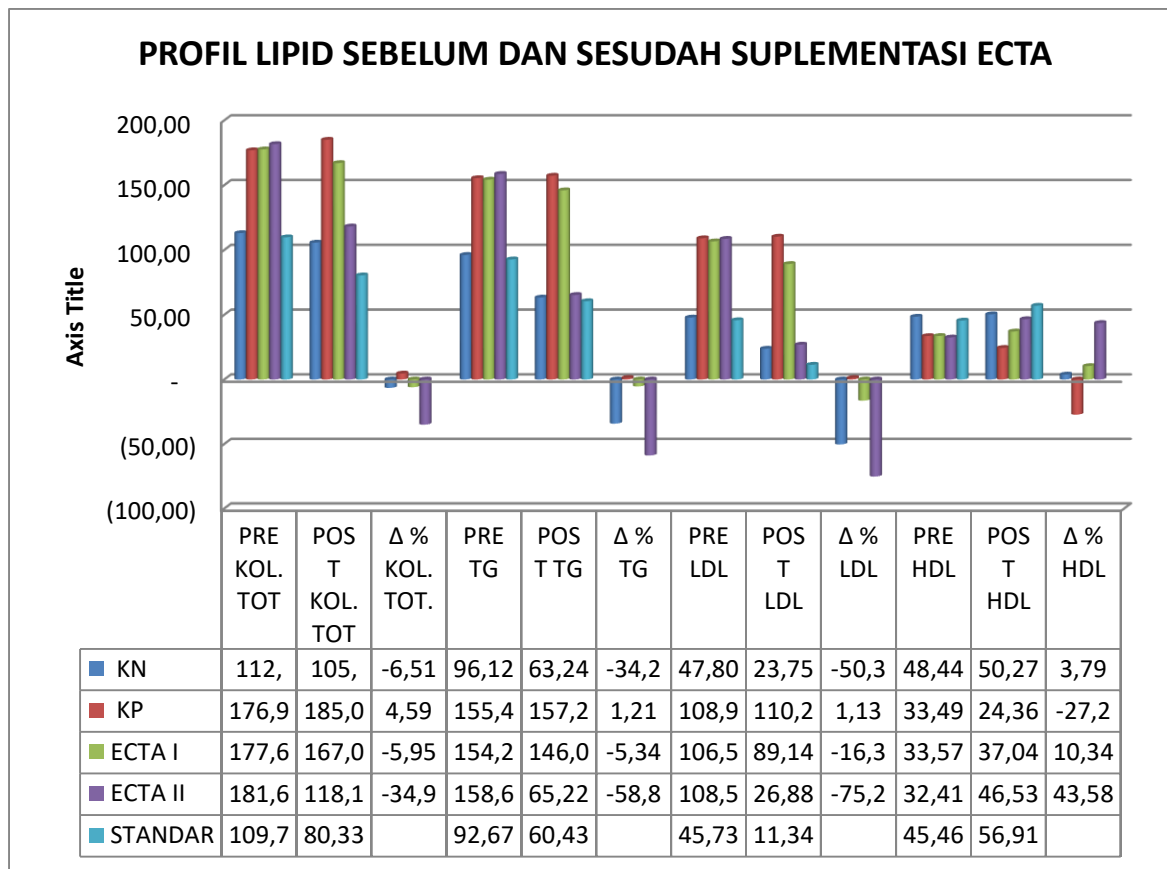
Indeks Massa Tubuh (g/cm² dan Persen Perubahan IMT (%))



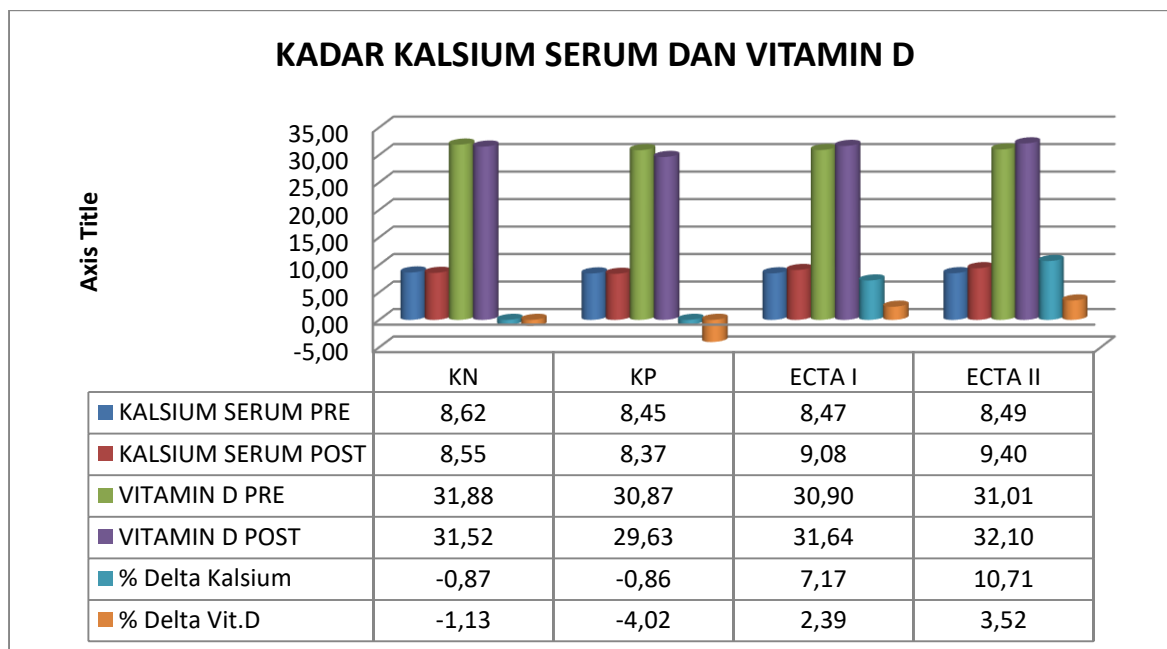
Asupan Pakan (g) dan Persen Perubahan Asupan Pakan (%)



LAMPIRAN 19. HISTOGRAM PROFIL LIPID TIKUS WISTAR



LAMPIRAN 20. HISTOGRAM KADAR KALSIMUM SERUM DAN VITAMIN D



LAMPIRAN 21. Pembuatan dan Uji Fisiko Kimia Ekstrak Cangkang Telur Ayam Ras

Hasil pembuatan ekstrak cangkang telur ayam ras menggunakan pelarut asam asetat (CH_3COOH) 2 N dan larutan asam klorida (HCl) 4% dapat dilihat pada gambar 19.



Gambar 19. Ekstrak cangkang telur ayam ras hasil maserasi larutan HCl 4% dan CH_3COOH 2 N

Nilai rerata karakteristik fisikokimia tepung cangkang telur ayam ras yang diekstraksi larutan asam asetat (CH_3COOH) 2 N dan larutan asam klorida (HCl) 4% dapat dilihat pada Tabel 11.

Tabel 11. Karakteristik Fisikokimia Ekstrak Cangkang Telur Ayam Ras Hasil Ekstraksi Larutan HCl 4% dan CH_3COOH 2 N

Parameter	Rerata \pm SD	
	HCl 4%	CH_3COOH 2 N
Kalsium (%)	35,46 \pm 2,04	27,41 \pm 2,56
CaCO_3 (%)	95,54 \pm 1,16	94,75 \pm 2,28
Fosfor (%)	0,61 \pm 0,04	0,52 \pm 0,08
Air (%)	0,58 \pm 0,06	0,75 \pm 0,72
Abu (%)	86,48 \pm 0,62	79,18 \pm 1,27
Rendemen (%)	81, 24	75, 33

Kadar Air (AOAC, 925.09, 2005)

Kadar air tepung cangkang telur ayam ras hasil ekstraksi larutan HCl 4% (0,58% \pm 0,06) lebih rendah dibandingkan hasil ekstraksi CH_3COOH 2 N (0,75% \pm 0,72). Hasil penelitian ini mendukung hasil penelitian Gongruttananun (2011) bahwa penambahan konsentrasi HCl 2,5% menghasilkan tepung cangkang telur ayam dengan kadar air

1,19±0,06%. Hasil penelitian (E.O. Ajala, O.A.A. Eletta, 2018) diketahui kadar air cangkang ayam adalah $0,95 \pm 0,09\%$.

Kadar air yang relatif rendah pada cangkang telur ayam ras diduga disebabkan oleh karakteristik cangkang yang memiliki tekstur padat serta tersusun atas zat kapur. Kadar air yang rendah pada tepung cangkang telur ayam yang dihasilkan dapat memperpanjang umur simpan dengan kualitas yang baik. Kadar air yang tinggi cenderung mendorong kontaminasi mikroba dan degradasi kimia dalam banyak zat (Ooi et al., 2012).

Kadar Abu (AOAC, 941.12, 2005)

Kadar abu tepung cangkang telur ayam ras hasil ekstraksi larutan HCl 4% pada penelitian ini lebih tinggi ($86,48\% \pm 0,62$) dibandingkan hasil ekstraksi larutan CH_3COOH 2 N ($79,18\% \pm 1,27$). Hasil penelitian ini sesuai dengan hasil penelitian Garnjanagoonchorn & Changpuak (2007) menunjukkan tepung cangkang telur ayam hasil ekstraksi HCl 4% memiliki kadar abu 94,37%. Gongruttananun (2011) menyatakan penambahan konsentrasi HCl 2,5% menghasilkan tepung cangkang telur ayam dengan kadar abu 91%. Hasil penelitian ini berbeda dengan hasil penelitian (E.O. Ajala, O.A.A. Eletta, 2018) diketahui kadar abu cangkang telur ayam sebesar $45,29 \pm 0,06\%$.

Kadar abu suatu bahan menunjukkan kuantitas mineral dalam bahan tersebut. Kadar abu dipengaruhi oleh jenis cangkang yang digunakan sebagai bahan baku. Kadar abu adalah ukuran jumlah total senyawa anorganik seperti mineral dalam kulit telur (Ooi et al., 2012); (Segura-Campos et al., 2013).

Kadar abu yang tinggi pada tepung cangkang telur ayam ras diduga disebabkan oleh kandungan mineral yang cukup tinggi. Pada cangkang telur terdapat zat kapur (CaCO_3) sebagai bahan penyusun utama cangkang telur.

Kadar Kalsium Karbonat

Kadar kalsium karbonat tepung cangkang telur ayam ras hasil ekstraksi larutan HCl 4% pada penelitian ini lebih tinggi ($95,54\% \pm 1,16$) dibandingkan hasil ekstraksi larutan CH_3COOH 2 N ($94,75\% \pm 2,28$).

Hasil penelitian Garnjanagoonchorn & Changpuak (2007) menunjukkan tepung cangkang telur ayam hasil ekstraksi HCl 4% memiliki kadar kalsium klorida 87,38% (b/b). Gongruttananun (2011) menyatakan penambahan konsentrasi HCl 2,5% menghasilkan

tepung cangkang telur ayam dengan kadar kalsium karbonat CaCO_3 98,4%. Miss.A.P.Chakraborty (2016) menunjukkan tepung cangkang telur ayam hasil ekstraksi HCl 4% memiliki kadar kalsium karbonat 85%.

Kadar Kalsium (AOAC, 2005)

Kadar kalsium tepung cangkang telur ayam ras hasil ekstraksi larutan HCl 4% lebih tinggi ($35,46\% \pm 2,04$) dibandingkan hasil ekstraksi larutan CH_3COOH 2 N ($27,41\% \pm 2,56$). Gongruttananun (2011) menyatakan penambahan konsentrasi HCl 2,5% menghasilkan tepung cangkang telur ayam dengan kadar kalsium 28,17%.

Miss.A.P.Chakraborty (2016) menyatakan tepung cangkang telur ayam hasil ekstraksi HCl 4% memiliki kadar kalsium 38%. Hasil penelitian Aminah et al., (2016) dan Yonata, Diode, et.al (2017) diketahui tepung cangkang telur ayam hasil ekstraksi larutan CH_3COOH 2 N memiliki kadar kalsium yang berbeda masing-masing 20,67% dan 6,41%.

Penelitian Yonata, Aminah, & Hersoelistyorini, (2017) yang membandingkan kadar kalsium dari berbagai jenis cangkang telur unggas diketahui bahwa rerata kadar kalsium cangkang telur unggas yang diekstraksi dengan asam asetat berkisar 20,67- 25,73%. Hasil penelitian Ayu Intan Safitri, Nurul Muslihah, (2014) diketahui berdasarkan pengujian kalsium dengan metode AAS, didapatkan hasil dalam 100 g tepung cangkang telur ayam ras terdapat 7,2 g kalsium (7,2%).

Menurut Gongruttananun (2011) kalsium dari cangkang telur terdiri dari 98,4% CaCO_3 dan 0,8% $\text{Ca}_3(\text{PO}_4)_2$ dengan kelarutan yang rendah. Tingginya kandungan kalsium yang terdapat dalam cangkang telur ayam ras diharapkan dapat memenuhi kalsium yang dibutuhkan oleh tubuh makhluk hidup melalui cara fortifikasi maupun suplementasi.

Kadar Fosfor (P)

Kadar fosfor tepung cangkang telur ayam ras hasil ekstraksi larutan HCl 4% ($0,61\% \pm 0,04$) lebih tinggi dibandingkan hasil ekstraksi larutan CH_3COOH 2 N ($0,52\% \pm 0,08$). Hasil penelitian ini mendukung Gongruttananun (2011) menyatakan bahwa penambahan larutan HCl 2,5% menghasilkan tepung cangkang telur ayam dengan kadar $\text{Ca}_3(\text{PO}_4)_2$ sebesar 0,8%.

Cangkang telur ayam ras terdiri atas sebagian besar kalsium karbonat dan sebagian kecil fosfat. Fosfor tidak terbentuk secara bebas di alam dan tersedia dalam bentuk fosfat dan ortofosfat. Fosfor merupakan mineral yang cukup banyak terdapat pada tubuh hewan.

Fosfor merupakan mineral kedua terbanyak setelah kalsium yang terdapat dalam tubuh dan bersama-sama dengan kalsium terikat dalam kerangka tulang (Ilich dan Kerstetter, 2000). Hubungan antara kalsium dan fosfor dalam plasma, mempunyai korelasi yang sangat nyata, yaitu sebesar 0,998. Rasio kalsium dan fosfor plasma untuk pembentukan tulang berkisar 1,5:1. Hasil penelitian ini menunjukkan perbandingan Ca : P untuk hasil ekstraksi HCl 4% = 35,46% ± 2,04 : 0,61%± 0,04, sedangkan ekstraksi larutan CH₃COOH 2 N menghasilkan perbandingan Ca : P = 27,41%± 2,56 : 0,52%± 0,08.

Rendemen (AOAC 2005)

Rendemen merupakan persentase tepung cangkang telur ayam ras yang dihitung berdasarkan perbandingan antara tepung cangkang telur ayam ras yang dihasilkan dengan berat bahan baku (cangkang telur ayam ras) yang telah dibersihkan. Semakin banyak rendemen yang dihasilkan maka semakin efisien perlakuan yang diterapkan. Hasil penelitian ini diperoleh nilai rendemen tepung cangkang telur ayam ras hasil ekstraksi larutan HCl 4% lebih tinggi (81,24%) dibandingkan hasil ekstraksi larutan CH₃COOH 2 N (75,33%).

Hasil penelitian Siti Aminah (2016) menunjukkan rerata rendemen tepung cangkang telur yang diekstraksi dengan asam asetat (CH₃COOH 2 N) berkisar antara 68,97- 88,83%. Yonata, Aminah, & Hersoelistyorini, (2017) menyatakan pengolahan cangkang telur unggas menjadi tepung cangkang dengan metode perendaman (aquades, HCl, CH₃COOH dan NaOH) memiliki rendemen yang cukup tinggi berkisar 78.37- 98.62%.

LAMPIRAN 22. Pembuatan dan Analisa Fisiko Kimia Pakan Tinggi Lemak / *High Fat Diet (HFD)* untuk Tikus Wistar

Ransum pelet diformulasi khusus untuk mencapai target kandungan gizi yang dikehendaki untuk diberikan kepada ternak atau organisme. Pakan HFD dibuat berbentuk pelet berdasarkan metode penelitian (Dewi Apri Astuti, 2015) yang dimodifikasi. Hasil formulasi pelet tinggi lemak yang memiliki karakteristik kimia dan fisik yang lebih baik, digunakan sebagai pakan untuk diet induksi obesitas pada tikus wistar jantan.

Hasil pengukuran karakteristik kimia dari formulasi pakan HFD dapat dilihat pada Tabel 12.

Tabel 12. Komposisi kimia pelet HFD FI dan pakan standar

Zat gizi (%)	Pellet HFD FI (%)	Pellet HFD FII (%)	Pakan standar CP594* (%)
Lemak	22,55 ± 0,16	25,44 ± 0,16	3
Protein	19,57 ± 0,35	19,37 ± 0,01	17,5 – 19,5
Karbohidrat	45,48 ± 0,26	44,51 ± 0,21	48,7
Serat	6,34 ± 0,64	5,31 ± 0,49	8
Abu	6,08 ± 0,12	5,39 ± 0,09	7
Air	8,47 ± 0,03	7,87 ± 0,09	13
Kalsium	0,85 ± 0,00	0,82 ± 0,01	0,9
Fosfor	0,17 ± 0,01	0,15 ± 0,01	0,9

Sumber : * PT. Pokphand (produsen pakan)

Pada tabel 12 diketahui rerata kadar lemak pelet HFD formula II (HFD FII) lebih tinggi (25,44% ± 0,16) dibandingkan pelet HFD formula I (HFD FI) yaitu 22,55%± 0,16 dan pakan standar (3%). Sedangkan kadar protein, karbohidrat, serat, abu kalsium dan fosfor pellet HFD FII lebih rendah dibanding pelet HFD FI. Perbedaan kadar lemak pada pellet HFD FI dan HFD FII terutama disebabkan persentase penggunaan mentega dan telur ayam ras dalam formula HFD FII lebih tinggi yaitu 30% dan 20%, dibandingkan HFD FI (20% dan 10%). Sedangkan sumber lemak pakan standar berasal dari tepung ikan, bungkil kedelai, bungkil kelapa, dan bungkil kacang tanah yang mayoritas dari sumber lemak nabati, sehingga kadar lemak totalnya lebih rendah dari HFD FII maupun HFD FI.

Hasil penelitian ini mendukung pernyataan (Parasuraman & Wen, 2015) bahwa komposisi diet yang umum digunakan untuk menginduksi obesitas sebagian besar kaya akan kolesterol / lemak daripada karbohidrat dan protein yang membantu meningkatkan berat badan hewan dan juga meningkatkan kadar lipid. Kadar air pellet HFD FII (7,87%±0,09) lebih rendah dari pellet HFD FI (8,47% ± 0,03), kadar air dalam suatu bahan sangat mempengaruhi kualitas dari bahan pakan, apabila kadar air suatu bahan tidak memenuhi syarat maka akan mengalami perubahan fisik dan kimiawi, ditandai dengan tumbuhnya mikroorganisme sehingga tidak layak dikonsumsi (Saenab et al., 2010). Selain itu pengurangan kadar air akan mengurangi berat ransum sehingga memudahkan dan menghemat pengepakan (Akhadiarto, 2010).

Karakteristik fisik pelet HFD

Karakteristik fisik dari formulasi pelet HFD dapat dilihat pada Tabel 13.

Tabel 13. Karakteristik fisik pelet HFD FI dan HFD FII

Formula	Basah			Kering		
	Berat (gr)	Panjang (cm)	Diameter (cm)	Berat (gr)	Panjang (cm)	Diameter (cm)
HFD FI	1000	1	0,5	800.48	1	0,5
	1000	1	0,5	800.50	1	0,5
Rerata	1000	1	0,5	800.49	1	0,5
HFD FII	1000	1	0,5	810.10	1	0,5
	1000	1	0,5	810.06	1	0,5
Rerata	1000	1	0,5	810.08	1	0,5

$$\text{Rendemen HFD FI} = \frac{800,49}{1.000} \times 100\% = 80,05\%$$

$$\text{Rendemen HFD FII} = \frac{810,08}{1.000} \times 100\% = 81,01\%$$

Pada tabel 13 diketahui berat awal masing-masing formula HFD FI dan HFD FII sebesar 1000 g, setelah pengeringan pada pelet HFD FI dan HFD II masing-masing mengalami pengurangan berat 190,51 g dan 189,20 g. Sedangkan diameter dan panjang masing-masing formulasi pelet tidak mengalami perubahan. Rendemen pada HFD FI sebesar 80,05% dan HFD FII 81,01%. Hasil analisa fisikokimia dari formulasi pellet tinggi lemak, diketahui pellet HFD FII memiliki kadar lemak dan rendemen lebih tinggi (25,44% ± 0,16; 81,01%) serta kadar air lebih rendah (7,87% ± 0,09) dibandingkan pellet HFD FI sehingga pellet HFD FII dipilih sebagai pakan induksi obesitas pada tikus wistar jantan untuk memperoleh hewan coba model obesitas dan dislipidemia.



Gambar 20. Pellet Pakan HFD I dan HFD II