

LAMPIRAN

Lampiran 1. Hasil Determinasi Tanaman *Costus Speciosus*

HERBARIUM JATINANGOR
LABORATORIUM TAKSONOMI TUMBUHAN
JURUSAN BIOLOGI FMIPA UNPAD
 Gedung D2-212, Jl. Raya Bandung Sumedang Km 21 Jatinangor
 Telp. 089689992695, email: phanerogamae@yahoo.com

LEMBAR IDENTIFIKASI TUMBUHAN

No.99/HB/02/2025.

Herbarium Jatinangor, Laboratorium Taksonomi Tumbuhan, Jurusan Biologi FMIPA UNPAD, dengan ini menerangkan bahwa:

Nama : Vierly Stephany Putri Wahyudi
 NIM/NIDN : 211FF03087
 Instansi : Universitas Bhakti Kencana.
 Lokasi : Bandung.

Telah melakukan identifikasi tumbuhan, dengan No. Koleksi: -
 Tanggal Koleksi : 26 Februari 2025

Hasil Identifikasi

Nama Ilmiah : *Cheilocostus speciosus* (J.Koenig) C.D.Specht
 Sinonim : *Costus speciosus* (J.Koenig) Sm.
 Nama Lokal : Rimpang Pacing
 Famili : Costaceae

Klasifikasi (Hirarki Taksonomi)

Kingdom	Plantae
Divisi	Magnoliophyta
Class	Liliopsida
Ordo	Zingiberales
Famili	Costaceae
Genus	<i>Cheilocostus</i>
Species	<i>Cheilocostus speciosus</i> (J.Koenig) C.D.Specht

Referensi:

Cronquist, Arthur. 1981. *An Integrated System of Classification of Flowering Plants*.
 Columbia University Press. New York
 The Plant List. *Website Dunia Tumbuhan*. <http://www.theplantlist.org/tpl1.1/record/kew-158489>.
 Backer, C. A. and Bakhuizen v/d Brink R. C Jr. 1963. *Flora of Java*. Wolter-Noordhoff NV.
 Groningen.

Jatinangor, 27 Februari 2025.

Identifikator,

LABORATORIUM TAKSONOMI TUMBUHAN
 JURUSAN BIOLOGI FMIPA-UNPAD

Drs. Ioko Kusmoro, M.P.

NIP. 19600801 199101 1 001

Lampiran 2.Kode Etik



KOMISI ETIK PENELITIAN KESEHATAN UNIVERSITAS BHAKTI KENCANA

Jl. Soekarno - Hatta 754, Bandung
Telp : 022-7830 760 / 022-7830-768
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KOMISI ETIK PENELITIAN KESEHATAN
HEALTH RESEARCH ETHICS COMMITTEE
UNIVERSITAS BHAKTI KENCANA
BHAKTI KENCANA UNIVERSITY

KETERANGAN LAYAK ETIK
DESCRIPTION OF ETHICAL APPROVAL
"ETHICAL APPROVAL"
172/09.KEPK/UBK/VII/2025

Protokol penelitian yang diusulkan oleh :
The research protocol proposed by :

Peneliti Utama : Yuda Nanda Andika
Principal In Investigator

Nama institusi : Universitas Bhakti kencana
Name of institution

Dengan judul :
Title

Pengaruh Pemberian Ekstrak Rimpang Pacing Terhadap Kadar Kolesterol Total dan MDA Pada Model Hewan Diabetes Yang Diinduksi Fruktosa dan Aloksan

Effect of Pacing Rhizome Extract on Total Cholesterol and MDA Levels in Animal Models of Fructose and Aloxan-Induced Diabetes

Dinyatakan layak etik sesuai (tujuh) standar WHO 2011, yaitu 1) Nilai Sosial, 2) Nilai Ilmiah, 3) Pemerataan Beban dan Manfaat, dan 4) Risiko, 5) Bujukan atau eksploitasi, 6) Kerahasiaan atau Privacy, 7) Persetujuan Setelah Penjelasan, yang merujuk pada Pedoman CIOMS 2016. Hal ini seperti yang ditunjukkan oleh terpenuhinya indikator setiap standar.

Declared to be ethically appropriate in accordance to 7 (seven) WHO 2011standards, 1) Social Value, 2) Scientific Value, 3) Equitable Assessment and Benefits, 4) Risks, 5) Persuasion/Eksplotation, 6) Confidentiality and Privacy, and Informed Consent, referring to the 2016 CIOMS guidelines. This is as indicated by the fulfillment of the indicators of each standards.

Pernyataan Laik Etik ini berlaku selama kurun waktu 01 Juli 2025 sampai dengan tanggal 01 Juli 2026.

This declaration of ethics applies during the period 1st July 2025 until 1st July 2026.

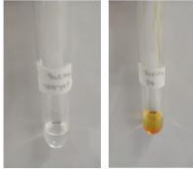
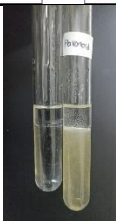
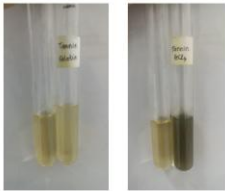
01 Juli 2025
Professor and Chairperson

R. Nety Rustikayanti, S.Kp., M.Kep
NIK. 02019010336

Lampiran 3. Karakterisasi Simplisia

 Susut Pengeringan	1. = 6,347% 2. = 6,027% 3. = 6,124% $\text{Rata-rata} = \frac{6,347\% + 6,027\% + 6,124\%}{3} = 6,166\%$
 Kadar Sari Larut Air	$\frac{34,46 \text{ gram} - 34,38 \text{ gram}}{5 \text{ gram}} \times \frac{100 \text{ mL}}{20 \text{ mL}} \times 100\% = 8\%$
 Kadar Sari Larut Etanol	$\frac{34,41 \text{ gram} - 34,38 \text{ gram}}{5 \text{ gram}} \times \frac{100 \text{ mL}}{20 \text{ mL}} \times 100\% = 3\%$
 Kadar Abu Total	$\frac{73,74 \text{ gram} - 73,66 \text{ gram}}{2 \text{ gram}} \times 100\% = 4\%$
 Kadar Abu Tidak Larut Asam	$\frac{73,68 \text{ gram} - 73,66 \text{ gram}}{2 \text{ gram}} \times 100\% = 1\%$

Lampiran 4. Skrining Fitokimia

Gambar/Pengujian	Hasil
 • Ferrous Mayer • Ferrous Sulphate	+
 Flavonoid	+
 Kuinon	+
 Tanin	+
 Saponin	+
 Steroid/Triterpenoid	+

Lampiran 5. Perlakuan Terhadap Hewan Uji



Lampiran 6. Perhitungan Larutan dan Dosis

1. Perhitungan larutan Na-CMC 0,5%

$$0,5\% = 0,5 \text{ gram/ } 100 \text{ mL}$$

2. Perhitungan larutan fruktosa 25%

$$25\% = 25 \text{ gram/ } 100 \text{ mL}$$

3. Perhitungan dosis obat pembanding (Metformin)

Dosis : 500 mg dilarutkan dalam 100 mL Na-CMC

Dosis Tikus : $500 \text{ mg} \times 0,018 = 9 \text{ mg/ } 200 \text{ gram BB tikus}$

Volume Pemberian : $\frac{9 \text{ mg}}{500 \text{ mg}} \times 100 \text{ mL} = 1,8 \text{ mL/200gramBB tikus}$

4. Perhitungan dosis larutan uji ekstrak

Dosis 1	: 150 mg/KgBB
Dosis tikus	: $\frac{200 \text{ g}}{1000 \text{ g}} \times 150 \text{ mg} = 30 \text{ mg/200gramBB}$
Volume Pemberian	: 30 mg/2 mL Na-CmC
Jumlah tikus yang diberi dosis 1	: 7 ekor
Pembuatan larutan	: $\frac{30 \text{ mg}}{2 \text{ mL}} \times 7 = \frac{210 \text{ mg}}{14 \text{ mL}}$
Untuk dosis 1	: $\frac{300 \text{ mg ekstrak}}{20 \text{ mL pelarut}}$
Dosis 2	: 300 mg/KgBB
Dosis tikus	: $\frac{200 \text{ g}}{1000 \text{ g}} \times 300 \text{ mg} = 60 \text{ mg / 200gramBB}$
Volume Pemberian	: 60 mg/2 mL Na-CmC
Jumlah tikus yang diberi dosis 1	: 7 ekor
Pembuatan larutan	: $\frac{60 \text{ mg}}{2 \text{ mL}} \times 7 = \frac{420 \text{ mg}}{14 \text{ mL}}$
Untuk dosis 2	: $\frac{600 \text{ mg ekstrak}}{20 \text{ mL pelarut}}$
Dosis 3	: 450 mg/KgBB

Dosis tikus	: $\frac{200 \text{ g}}{1000 \text{ g}} \times 450 \text{ mg} = 90 \text{ mg} / 200 \text{ gramBB}$
Volume Pemberian	: 90 mg/2 mL Na-CmC
Jumlah tikus yang diberi dosis 1	: 7 ekor
Pembuatan larutan	: $\frac{90 \text{ mg}}{2 \text{ mL}} \times 7 = \frac{630 \text{ mg}}{14 \text{ mL}}$
Untuk dosis 2	: $\frac{900 \text{ mg ekstrak}}{20 \text{ mL pelarut}}$

5. Perhitungan dosis Aloksan

Dosis Aloksan	: 150 mg/KgBB
Dosis tikus	: $\frac{200 \text{ g}}{1000 \text{ g}} \times 150 \text{ mg} = 30 \text{ mg}/200 \text{ gramBB}$
Volume Pemberian	: 30 mg/1mL air

Lampiran 7. Dokumentasi hasil SPSS statistic One Way Anova (ANOVA)

Hasil SPSS Kadar Kolesterol

Normalitas dan Homogenitas

Tests of Normality						
Kelompok		Kolmogorov-Smirnov ^a			Shapiro-Wilk	
		Statistic	df	Sig.	Statistic	Sig.
T0	Normal	,168	5	,200 [*]	,979	,928
	Induksi	,236	5	,200 [*]	,881	,312
	Pembanding	,220	5	,200 [*]	,961	,817
	Uji 150	,141	5	,200 [*]	,989	,978
	Uji 300	,207	5	,200 [*]	,935	,629
	Uji 450	,173	5	,200 [*]	,980	,937
T38	Normal	,139	5	,200 [*]	,990	,980
	Induksi	,205	5	,200 [*]	,935	,631
	Pembanding	,205	5	,200 [*]	,942	,681
	Uji 150	,154	5	,200 [*]	,990	,980
	Uji 300	,266	5	,200 [*]	,885	,331
	Uji 450	,173	5	,200 [*]	,973	,892

^{*}. This is a lower bound of the true significance.
^a. Lilliefors Significance Correction

Test of Homogeneity of Variances				
	Levene Statistic	df1	df2	Sig.
T0	,862	5	24	,521
T38	1,177	5	24	,350

Anova

ANOVA					
		Sum of Squares	df	Mean Square	F
T0	Between Groups	18,954	5	3,791	,869
	Within Groups	104,680	24	4,362	
	Total	123,634	29		
T38	Between Groups	3394,223	5	678,845	120,744
	Within Groups	134,932	24	5,622	
	Total	3529,155	29		

Post Hoc (Tukey HSD T35)

T38	Normal	Induksi	-12,16000 [*]	1,49962	,000	-16,7967	-7,5233
		Pembanding	18,44000 [*]	1,49962	,000	13,8033	23,0767
		Uji 150	9,94000 [*]	1,49962	,000	5,3033	14,5767
		Uji 300	12,62000 [*]	1,49962	,000	7,9833	17,2567
		Uji 450	16,68000 [*]	1,49962	,000	12,0433	21,3167
	Induksi	Normal	12,16000 [*]	1,49962	,000	7,5233	16,7967
		Pembanding	30,60000 [*]	1,49962	,000	25,9633	35,2367
		Uji 150	22,10000 [*]	1,49962	,000	17,4633	26,7367
		Uji 300	24,78000 [*]	1,49962	,000	20,1433	29,4167
		Uji 450	28,84000 [*]	1,49962	,000	24,2033	33,4767
	Pembanding	Normal	-18,44000 [*]	1,49962	,000	-23,0767	-13,8033
		Induksi	-30,60000 [*]	1,49962	,000	-35,2367	-25,9633
		Uji 150	-8,50000 [*]	1,49962	,000	-13,1367	-3,8633
		Uji 300	-5,82000 [*]	1,49962	,008	-10,4567	-1,1833
		Uji 450	-1,76000	1,49962	,845	-6,3967	2,8767
	Uji 150	Normal	-9,94000 [*]	1,49962	,000	-14,5767	-5,3033
		Induksi	-22,10000 [*]	1,49962	,000	-26,7367	-17,4633
		Pembanding	8,50000 [*]	1,49962	,000	3,8633	13,1367
		Uji 300	2,68000	1,49962	,492	-1,9567	7,3167
		Uji 450	6,74000 [*]	1,49962	,002	2,1033	11,3767

Uji 300	Normal	-12,62000*	1,49962	,000	-17,2567	-7,9833
	Induksi	-24,78000*	1,49962	,000	-29,4167	-20,1433
	Pembanding	5,82000*	1,49962	,008	1,1833	10,4567
	Uji 150	-2,68000	1,49962	,492	-7,3167	1,9567
	Uji 450	4,06000	1,49962	,110	-,5767	8,6967
Uji 450	Normal	-16,68000*	1,49962	,000	-21,3167	-12,0433
	Induksi	-28,84000*	1,49962	,000	-33,4767	-24,2033
	Pembanding	1,76000	1,49962	,845	-2,8767	6,3967
	Uji 150	-6,74000*	1,49962	,002	-11,3767	-2,1033
	Uji 300	-4,06000	1,49962	,110	-8,6967	,5767

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

Perbandingan Kolesterol T0 dan T38

Paired Samples Test										
Kelompok			Paired Differences					t	df	Sig. (2-tailed)
			Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
						Lower	Upper			
Normal	Pair 1	T0 - T38	,28000	1,64530	,73580	-1,76291	2,32291	,381	4	,723
Induksi	Pair 1	T0 - T38	-12,76000	1,93727	,86637	-15,16543	-10,35457	-14,728	4	,000
Pembanding	Pair 1	T0 - T38	19,76000	3,91829	1,75231	14,89480	24,62520	11,277	4	,000
Uji 150	Pair 1	T0 - T38	9,00000	2,35690	1,05404	6,07352	11,92648	8,539	4	,001
Uji 300	Pair 1	T0 - T38	12,70000	2,43208	1,08766	9,68018	15,71982	11,676	4	,000
Uji 450	Pair 1	T0 - T38	17,64000	2,70795	1,21103	14,27763	21,00237	14,566	4	,000

Lampiran 8. Dokumentasi hasil SPSS statistic One Way Anova (ANOVA)

Hasil SPSS Kadar MDA

Normalitas dan Homogenitas

Tests of Normality							
MDA		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
T0	Normal	,198	5	,200 [*]	,957	5	,788
	Induksi	,237	5	,200 [*]	,961	5	,814
	Pembanding	,227	5	,200 [*]	,910	5	,468
	Uji 150	,142	5	,200 [*]	,979	5	,927
	Uji 300	,197	5	,200 [*]	,943	5	,684
	Uji 450	,243	5	,200 [*]	,894	5	,377
T38	Normal	,291	5	,191	,905	5	,439
	Induksi	,159	5	,200 [*]	,990	5	,980
	Pembanding	,201	5	,200 [*]	,881	5	,314
	Uji 150	,128	5	,200 [*]	,999	5	1,000
	Uji 300	,142	5	,200 [*]	,979	5	,927
	Uji 450	,221	5	,200 [*]	,953	5	,758

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Test of Homogeneity of Variances				
	Levene Statistic	df1	df2	Sig.
T0	,580	5	24	,715
T38	,301	5	24	,908

Anova

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
T0	Between Groups	,368	5	,074	,215	,953
	Within Groups	8,236	24	,343		
	Total	8,604	29			
T38	Between Groups	191,410	5	38,282	99,814	,000
	Within Groups	9,205	24	,384		
	Total	200,615	29			

Post Hoc

T38	Normal	Induksi	-7,1764000 [*]	,3916799	,000	-8,387447	-5,965353
		Pembanding	-,1766000	,3916799	,997	-1,387647	1,034447
		Uji 150	-2,6470000 [*]	,3916799	,000	-3,858047	-1,435953
		Uji 300	-1,5292000 [*]	,3916799	,008	-2,740247	-,318153
		Uji 450	-,1178000	,3916799	1,000	-1,328847	1,093247
	Induksi	Normal	7,1764000 [*]	,3916799	,000	5,965353	8,387447
		Pembanding	6,9998000 [*]	,3916799	,000	5,788753	8,210847
		Uji 150	4,5294000 [*]	,3916799	,000	3,318353	5,740447
		Uji 300	5,6472000 [*]	,3916799	,000	4,436153	6,858247
		Uji 450	7,0586000 [*]	,3916799	,000	5,847553	8,269647
	Pembanding	Normal	-,1766000	,3916799	,997	-1,034447	1,387647
		Induksi	-6,9998000 [*]	,3916799	,000	-8,210847	-5,788753
		Uji 150	-2,4704000 [*]	,3916799	,000	-3,681447	-1,259353
		Uji 300	-1,3526000 [*]	,3916799	,022	-2,563647	-,141553
		Uji 450	,0588000	,3916799	1,000	-1,152247	1,269847

Uji 150	Normal	2,6470000*	,3916799	,000	1,435953	3,858047
	Induksi	-4,5294000*	,3916799	,000	-5,740447	-3,318353
	Pembanding	2,4704000*	,3916799	,000	1,259353	3,681447
	Uji 300	1,1178000	,3916799	,082	-,093247	2,328847
	Uji 450	2,5292000*	,3916799	,000	1,318153	3,740247
Uji 300	Normal	1,5292000*	,3916799	,008	,318153	2,740247
	Induksi	-5,6472000*	,3916799	,000	-6,858247	-4,436153
	Pembanding	1,3526000*	,3916799	,022	,141553	2,563647
	Uji 150	-1,1178000	,3916799	,082	-2,328847	,093247
	Uji 450	1,4114000*	,3916799	,016	,200353	2,622447
Uji 450	Normal	,1178000	,3916799	1,000	-1,093247	1,328847
	Induksi	-7,0586000*	,3916799	,000	-8,269647	-5,847553
	Pembanding	-,0588000	,3916799	1,000	-1,269847	1,152247
	Uji 150	-2,5292000*	,3916799	,000	-3,740247	-1,318153
	Uji 300	-1,4114000*	,3916799	,016	-2,622447	-,200353

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

Lampiran 9. Hasil cek plagiarisme

Yuda Nanda Andika PENGARUH PEMBERIAN EKSTRAK
RIMPANG PACING (COSTUS SPECIOSUS) TERHADAP KADAR
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Lampiran 10. Bimbingan

No	Tanggal	Dosen Pembimbing	Topik	Disetujui	Aksi
1	20 Februari 2025	AULIA NURFAZRI ISTIQOMAH, M.Si	Diskusi prosedur penelitian	✓	 
1	5 Mei 2025	apt. KHARINA SEPTI LESTARI, M.S.Farm.	Diskusi prosedur penelitian	✓	 
2	28 Mei 2025	apt. KHARINA SEPTI LESTARI, M.S.Farm.	Mengirimkan hasil panjang gelombang dan kurva kalibrasi dari baku MDA	✓	 
2	21 Februari 2025	AULIA NURFAZRI ISTIQOMAH, M.Si	Diskusi prosedur penelitian	✓	 
3	12 Juni 2025	apt. KHARINA SEPTI LESTARI, M.S.Farm.	melaporkan hasil pengujian dan grafik kolesterol	✓	 
3	26 Februari 2025	AULIA NURFAZRI ISTIQOMAH, M.Si	Diskusi prosedur penelitian	✓	 
4	19 Maret 2025	AULIA NURFAZRI ISTIQOMAH, M.Si	Data spreadsheet	✓	 
4	29 Juni 2025	apt. KHARINA SEPTI LESTARI, M.S.Farm.	melaporkan data kolesterol dan MDA	✓	 
5	3 Mei 2025	AULIA NURFAZRI ISTIQOMAH, M.Si	Kemajuan 1	✓	 
5	3 Juli 2025	apt. KHARINA SEPTI LESTARI, M.S.Farm.	melaporkan BAB 4	✓	 
6	9 Juli 2025	apt. KHARINA SEPTI LESTARI, M.S.Farm.	bimbingan mengenai BAB 4&5	✓	 
6	9 Juli 2025	apt. KHARINA SEPTI LESTARI, M.S.Farm.	bimbingan mengenai BAB 4&5	✓	 
6	28 Mei 2025	AULIA NURFAZRI ISTIQOMAH, M.Si	Mengirimkan hasil panjang gelombang dan kurva kalibrasi dari baku MDA	✓	 
7	12 Juni 2025	AULIA NURFAZRI ISTIQOMAH, M.Si	Diskusi analisis data	✓	 
7	10 Juli 2025	apt. KHARINA SEPTI LESTARI, M.S.Farm.	tanda tangan persetujuan	✓	 
8	12 Juni 2025	AULIA NURFAZRI ISTIQOMAH, M.Si	Kemajuan 2	✓	 
9	29 Juni 2025	AULIA NURFAZRI ISTIQOMAH, M.Si	melaporkan data kolesterol dan MDA	✓	 
10	30 Juni 2025	AULIA NURFAZRI ISTIQOMAH, M.Si	bimbingan mengenai hasil data	✓	 
11	3 Juli 2025	AULIA NURFAZRI ISTIQOMAH, M.Si	melaporkan BAB 4	✓	 
12	10 Juli 2025	AULIA NURFAZRI ISTIQOMAH, M.Si	bimbingan mengenai BAB 4&5	✓	 

Lampiran 11. Daftar Riwayat Hidup Penulis

RIWAYAT HIDUP



Nama lengkap : Yuda Nanda Andika
NIM : 211FF03107
Tempat/Tanggal Lahir : Ciamis, 04 September 2003
Agama : Islam
Alamat : Dusun Kiaralawang, RT.03/RW.02 desa
karngpawitan, kecamatan Kawali, kabupaten Ciamis
Email : yudanandaandika04@gmail.com
Pendidikan
1. SD : SDN 1 Karangpawitan
2. SMP : SMPN 3 Kawali
3. SMA : SMAN 1 Kawali
4. Universitas : Universitas Bhakti Kencana