

LAMPIRAN

Lampiran 1. Hasil Cek Turnitin

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Lampiran 2. Lembar Bimbingan



Fakultas Farmasi
Universitas
Bhakti Kencana

No. Dok. 02.64.00/FRM-03/AKD-SPMI



KARTU BIMBINGAN TUGAS AKHIR I/TUGAS AKHIR II

Pembimbing Utama	: Soni Muksinin, M. Si				
Nama Mahasiswa	: Agung Septiansah				
NPM	: 204403109				
Bidang Ilmu	: Ftf				

No	Hari/Tanggal	Waktu	Tempat	Materi	Paraf Dosen
1.	Selasa, 19 Maret 2019	13.00	Kampus	Revisi prosedur TPC	
2.	Kamis, 21/03/2019	13.00	Kampus	Fitsusi Media Na	
3.	Selasa, 23/04/2019	16.00	Kampus	Diskusikan lanjutan prosedur TPC	
4.	Kamis, 25/04/2019	14.00	WA	Diskusikan mengenai hasil uji awal BHL	
5.	Senin, 29/04/2019	11.00	Kampus	Laporan kemajuan I TA 2	
6.	Kamis, 30/05/2019	11.00	Kampus	Laporan kemajuan II TA 2	
7.	Rabu, 5/06/2019	11.00	Kampus	Diskusikan mengenai Titrasi	
8.	Rabu, 12/06/2019	12.29	Kampus	Diskusikan mengenai Hasil TPC	
9.	Kamis, 20/06/2019	12.00	Kampus	Diskusikan Hasil TPC dan prosedur Antibiogram	
10.	Kamis, 09/07/2019	15.00	Kampus	Hasil perhitungan Antibiogram	
11.	Selasa, 09/07/2019	16.00	Kampus	Revisi Antibiogram	
12.	Kamis, 11/07/2019	15.15	Kampus	Laporan kemajuan II TA 2	
13.	Kamis, 18/07/2019	13.30	Kampus	Revisi	
14.	Senin, 29/07/2019	12.00	Kampus	TA 2	
15.					
16.					
17.					

Catatan : Kartu ini harus dibawa setiap kali melakukan bimbingan dan harus diisi oleh dosen pembimbing.

Lampiran 3. Certificate of Determination

HERBARIUM JATINANGOR LABORATORIUM TAKSONOMI TUMBUHAN JURUSAN BIOLOGI FMIPA UNPAD Gedung D2-212, Jl. Raya Bandung Sumedang Km 21 Jatinangor Telp. 089689992695, email: phanerogamsc@yahoo.com	
LEMBAR IDENTIFIKASI TUMBUHAN No.46/HB/05/2024.	
Herbarium Jatinangor, Laboratorium Taksonomi Tumbuhan, Jurusan Biologi FMIPA UNPAD, dengan ini menerangkan bahwa:	
Nama	: Agung Septiansah
NIM/NIP	: 201FF03109
Instansi	: Universitas Bhakti Kencana.
Lokasi	: Bandung.
Telah melakukan identifikasi tumbuhan, dengan No. Koleksi: - Tanggal Koleksi : 05 Mei 2024.	
Hasil Identifikasi	
Nama Ilmiah	: <i>Averrhoa bilimbi</i> L.
Sinonim	: <i>Averrhoa obtusangulata</i> Stokes
Nama Lokal	: Belimbing wuluh
Suku/Famili	: Oxalidaceae
Klasifikasi (Hirarki Taksonomi)	
Kingdom	Plantae
Divisi	Tracheophyta
Class	Magnoliopsida
Ordo	Oxalidales
Famili	Oxalidaceae
Genus	<i>Averrhoa</i>
Species	<i>Averrhoa bilimbi</i> L.
Referensi: Backer, C. A. and Bakhuizen v/d Brink R. C Jr. 1963. Flora of Java. Wolter-Noordhoff NV. Groningen. 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 .	
Jatinangor, 07 Mei 2024. Identifikator,	
LABORATORIUM TAKSONOMI TUMBUHAN JURUSAN BIOLOGI FMIPA-UNPAD	
Drs. Joko Kusnoro, M.P. NIP. 196008011991011001	

Lampiran 4. Certificate of Media Nutrient Agar

Certificate of Analysis		
Certificate of Analysis ID:	1054500500_VM1011250_EN	
Producer and client:	Merck KGaA, Frankfurter Str. 250, 64293 Darmstadt, Germany	
Test laboratory:	Merck KGaA Qualitätskontrolle für mikrobiologische Produkte Frankfurter Str. 250, 64293 Darmstadt, Germany	
Sample identification:	GranuCult® Nutrient Agar acc. ISO 6579, ISO 10273 and ISO 21528	
Ordering number:	1.05450.0500	
Lot number:	VM1011250	
Accreditation:		
Test method:	DIN EN ISO 11133:2020 Performance testing of solid culture media: Quantitative method (spiral plater)	
Date of analysis:	2022/04/22	
Date of release:	2022/05/06	
Minimum shelf life:	2027/04/30	
Composition (g/l):	Peptone 5.0; Meat extract 3.0; Agar-agar 12.0.	
Preparation & sterilization:	Dissolve 20 g in 1 l of purified water. Heat in boiling water and agitate frequently until completely dissolved. Autoclave 15 min at 121 °C.	
Application:	Nutrient Agar is used for the cultivation of nonfastidious bacteria.	
Storage:	Store at +15 °C to +25 °C, dry and tightly closed. Do not use clumped or discolored medium. Protect from UV light (including sun light).	
The reported results refer exclusively to the specified medium, see Certificate of Analysis ID.		

SALINAN TERKENDALI
PT Agrima Energi Inovasi (AGAVE)

Lampiran 5. Certificate of Methanol for Analysis



Certificate of Analysis

1.06009.2500 Methanol for analysis EMSURE® ACS,ISO,Reag. Ph Eur
Batch 11258409

	Spec. Values		Batch Values	
Purity (GC)	≥ 99.9	%	99.9	%
Identity (IR)	conforms		conforms	
Appearance	clear		clear	
Color	≤ 10	Hazen	≤ 5	Hazen
Solubility in water	conforms		conforms	
Acidity	≤ 0.0002	meq/g	0.0001	meq/g
Alkalinity	≤ 0.0002	meq/g	≤ 0.0002	meq/g
Density (d 20 °C/20 °C)	0.791 - 0.793		0.793	
Boiling point	64 - 65	°C	64	°C
Benzene (impurity A) (GC)	≤ 2	ppm	≤ 1	ppm
Ethanol (GC)	≤ 0.05	%	≤ 0.01	%
Acetone	≤ 0.001	%	≤ 0.001	%
Acetaldehyde	≤ 0.001	%	≤ 0.001	%
Formaldehyde	≤ 0.001	%	≤ 0.001	%
Reactive carbonizable substances	conforms		conforms	
Carbonyl compounds (as CO)	≤ 0.001	%	≤ 0.001	%
Chloride (Cl)	≤ 0.5	ppm	≤ 0.5	ppm
Sulfate (SO ₄)	≤ 1	ppm	≤ 1	ppm
Substances reducing potassium permanganate (as O)	≤ 0.00025	%	≤ 0.00025	%
Ag (Silver)	≤ 0.000002	%	≤ 0.000002	%
Al (Aluminum)	≤ 0.000008	%	≤ 0.000008	%
As (Arsenic)	≤ 0.000002	%	≤ 0.000002	%
Au (Gold)	≤ 0.000002	%	≤ 0.000002	%
Ba (Barium)	≤ 0.00001	%	≤ 0.00001	%
Be (Beryllium)	≤ 0.000002	%	≤ 0.000002	%
Bi (Bismuth)	≤ 0.000002	%	≤ 0.000002	%
Ca (Calcium)	≤ 0.00008	%	≤ 0.00008	%
Cd (Cadmium)	≤ 0.000005	%	≤ 0.000005	%
Co (Cobalt)	≤ 0.000002	%	≤ 0.000002	%
Cr (Chromium)	≤ 0.000002	%	≤ 0.000002	%
Cu (Copper)	≤ 0.000002	%	≤ 0.000002	%
Fe (Iron)	≤ 0.00001	%	≤ 0.00001	%
Ga (Gallium)	≤ 0.000002	%	≤ 0.000002	%
In (Indium)	≤ 0.000002	%	≤ 0.000002	%
Li (Lithium)	≤ 0.000002	%	≤ 0.000002	%
Mg (Magnesium)	≤ 0.00001	%	≤ 0.00001	%
Mn (Manganese)	≤ 0.000002	%	≤ 0.000002	%
Mo (Molybdenum)	≤ 0.000002	%	≤ 0.000002	%
Ni (Nickel)	≤ 0.000002	%	≤ 0.000002	%
Pb (Lead)	≤ 0.00001	%	≤ 0.00001	%
Pt (Platinum)	≤ 0.000005	%	≤ 0.000005	%

Merck KGaA
Cooperation with General Partner
Friedrichstraße 255
69126 Darmstadt, Germany

The life science business of Merck KGaA, Darmstadt,
Germany operates as MilliporeSigma in the U.S. and
Canada.

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Certificate of Analysis

1.06009.2500 Methanol for analysis EMSURE® ACS,ISO,Reag. Ph Eur
Batch 11258409

Se (Tellurium)	≤ 0.00001	%	≤ 0.00001	%
Ti (Titanium)	≤ 0.000002	%	≤ 0.000002	%
Tl (Thallium)	≤ 0.000002	%	≤ 0.000002	%
V (Vanadium)	≤ 0.000002	%	≤ 0.000002	%
Zn (Zinc)	≤ 0.00001	%	≤ 0.00001	%
Zr (Zirconium)	≤ 0.000002	%	≤ 0.000002	%
Evaporation residue	≤ 0.0005	%	≤ 0.0001	%
Water	≤ 0.05	%	≤ 0.01	%

ACS, ISO, Reag Ph Eur

Date of release (DD.MM.YYYY) 01.12.2022
Minimum shelf life (DD.MM.YYYY) 31.10.2027

Jeanette David
Responsible laboratory manager quality control

This document has been produced electronically and is valid without a signature.

Lampiran 6. Dokumentasi Pembuatan Sari Buah Belimbing wuluh, Kombucha dan Pembuatan Kombucha Sari Buah Belimbing Wuluh



Lampiran 7. Dokumentasi Sterilisasi Alat dan Bahan



Lampiran 8. Dokumentasi Hasil Uji Analisis Kombucha Sari Buah Belimbing Wuluh

1. Uji Organoleptik



FORMULIR PENGUJIAN ORGANOLEPTIK SECARA (HEDONIK) TERHADAP FORMULASI MINUMAN READY TO DRINK DARI FERMENTASI KOMBUCHA SARI BUAH BELIMBING WULUH SEBAGAI ANTIOKSIDAN

Jawaban Anda telah direkam.

[Kirim jawaban lain](#)

Formulir ini dibuat dalam Bhumi Kencana University. Laporan Persepsi

2. Uji pH

Replikasi 1



Formula 1



Formula 2



Formula 3



Kontrol

Replikasi 2



Formula 1



Formula 2



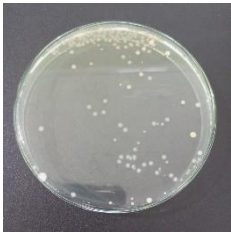
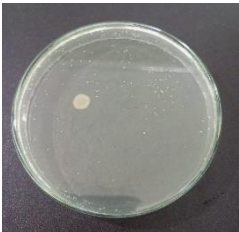
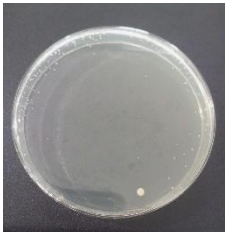
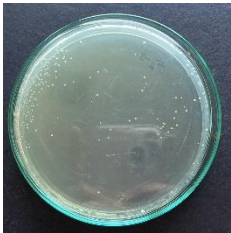
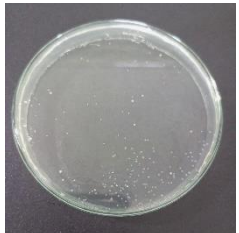
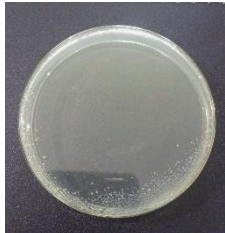
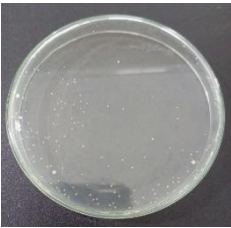
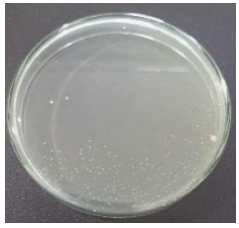
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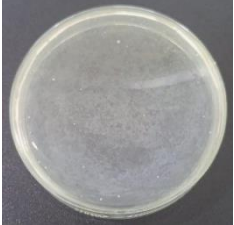
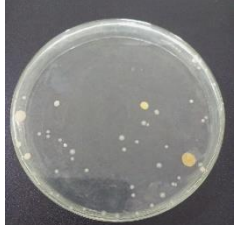
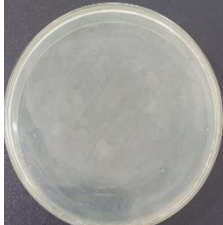
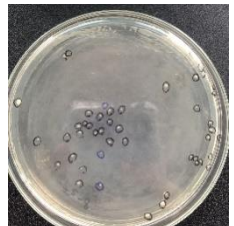
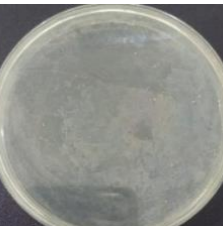


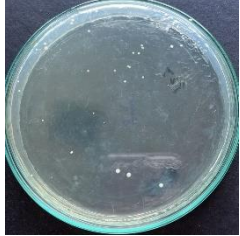
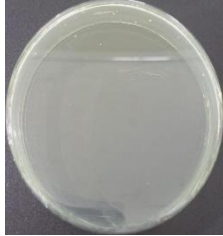
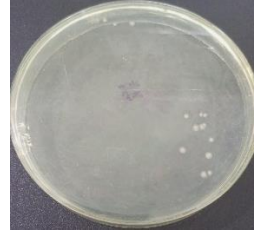
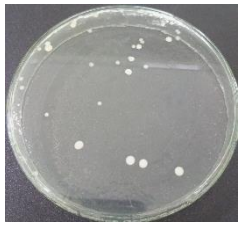
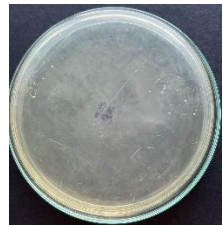
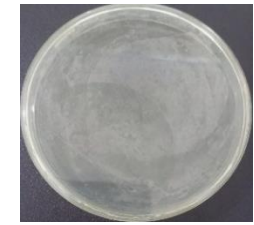
Kontrol

Perlakuan	Replikasi		Rata - rata	SD
	1	2		
Formula 1	2,04	2,11	2,075	0,05
Formula 2	2,26	2,27	2,265	0,01
Formula 3	2,45	2,42	2,435	0,02
Kontrol	3,15	3,08	3,115	0,05

3. Uji Total Bakteri Asam Laktat

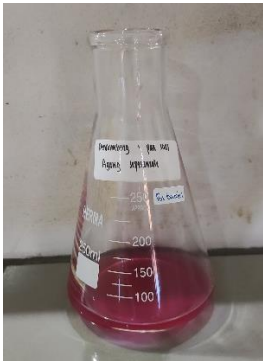
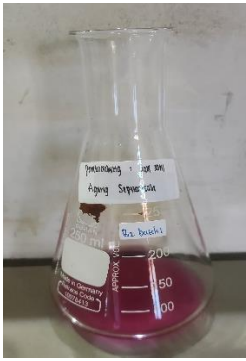
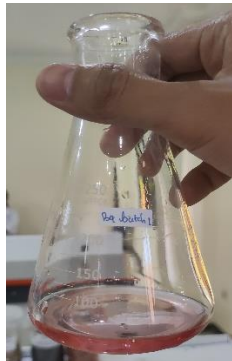
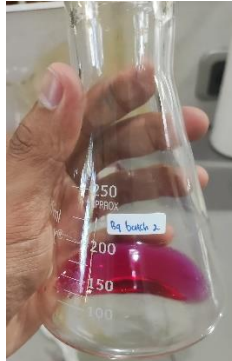
Formula 1 Replikasi 1  229×10^{-6} Pengenceran	Formula 1 Replikasi 1  153×10^{-7} Pengenceran	Formula 1 Replikasi 1  97×10^{-8} Pengenceran
Formula 1 Replikasi 2  223×10^{-6} Pengenceran	Formula 1 Replikasi 2  89×10^{-7} Pengenceran	Formula 1 Replikasi 2  80×10^{-8} Pengenceran
Formula 2 Replikasi 1  73×10^{-6} Pengenceran	Formula 2 Replikasi 1  64×10^{-7} Pengenceran	Formula 2 Replikasi 1  58×10^{-8} Pengenceran

Formula 2 Replikasi 2  66×10^{-6} Pengenceran	Formula 2 Replikasi 2  55×10^{-7} Pengenceran	Formula 2 Replikasi 2  45×10^{-8} Pengenceran
Formula 3 Replikasi 1  54×10^{-6} Pengenceran	Formula 3 Replikasi 1  44×10^{-7} Pengenceran	Formula 3 Replikasi 1  29×10^{-8} Pengenceran
Formula 3 Replikasi 2  52×10^{-6} Pengenceran	Formula 3 Replikasi 2  47×10^{-7} Pengenceran	Formula 3 Replikasi 2  28×10^{-8} Pengenceran

Kontrol Replikasi 1  40×10^{-6} Pengenceran	Kontrol Replikasi 1  28×10^{-7} Pengenceran	Kontrol Replikasi 1  17×10^{-8} Pengenceran
Kontrol Replikasi 2  40×10^{-6} Pengenceran	Kontrol Replikasi 2  16×10^{-7} Pengenceran	Kontrol Replikasi 2  11×10^{-8} Pengenceran

Perlakuan	Replikasi		Rata - Rata
	1	2	
Formula 1	$3,819 \times 10^9$	$3,037 \times 10^9$	$3,428 \times 10^9$
Formula 2	$2,171 \times 10^9$	$1,705 \times 10^9$	$1,938 \times 10^9$
Formula 3	$1,131 \times 10^9$	$1,107 \times 10^9$	$1,119 \times 10^9$
Kontrol	$1,6 \times 10^8$	$0,4 \times 10^8$	1×10^8

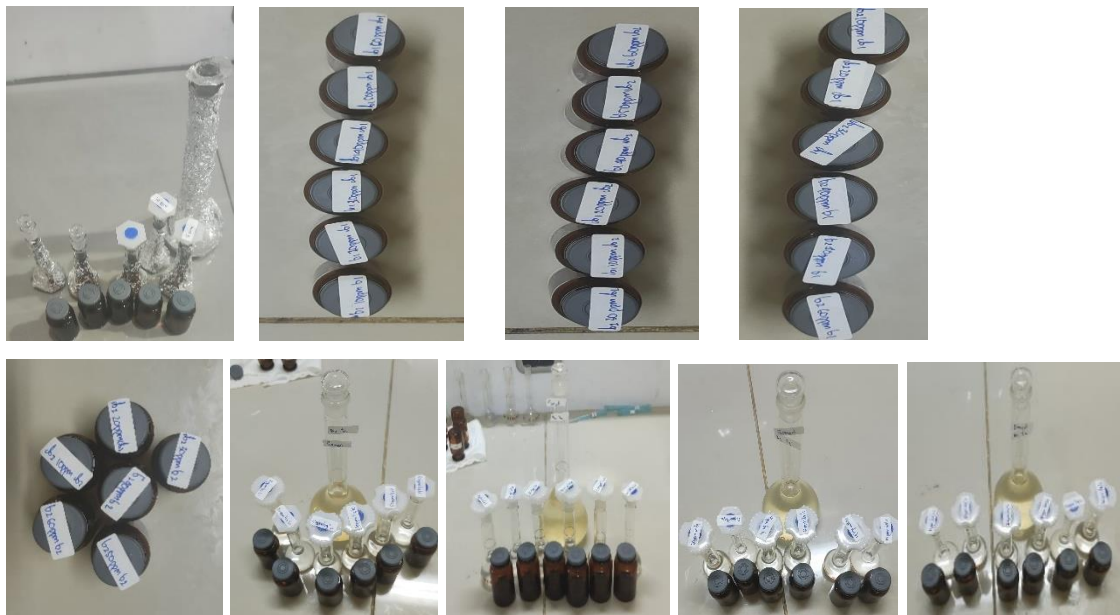
4. Uji Kadar Asam Laktat

Formula 1 Replikasi 1	Formula 2 Replikasi 1	Formula 3 Replikasi 1	Kontrol Replikasi 1
			
Formula 1 Replikasi 2	Formula 2 Replikasi 2	Formula 3 Replikasi 2	Kontrol Replikasi 2
			

Perlakuan	Replikasi		Kadar Asam Laktat (%)	SD
	1	2		
Formula 1	1,8	1,66	1,73	0,099
Formula 2	1,49	1,26	1,37	0,163
Formula 3	1,08	0,81	0,94	0,191
Kontrol	0,69	0,54	0,61	0,106

Ket: Menggunakan rumus yang ada di prosedur

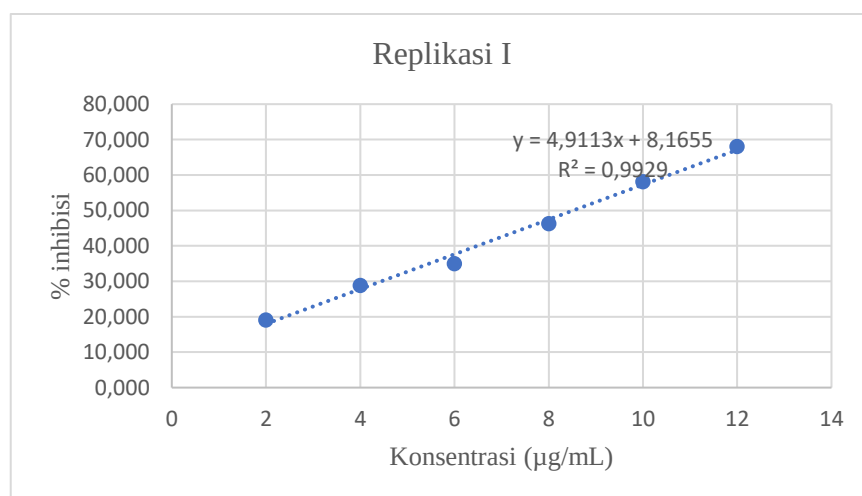
5. Uji Aktivitas Antioksidan

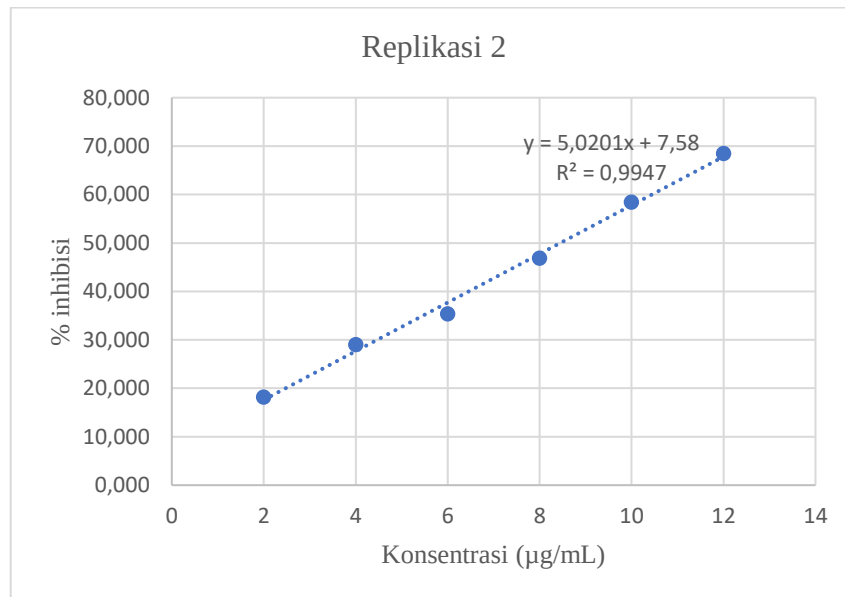


Lampiran 9. Data Hasil Uji Aktivitas Antioksidan

Vitamin C

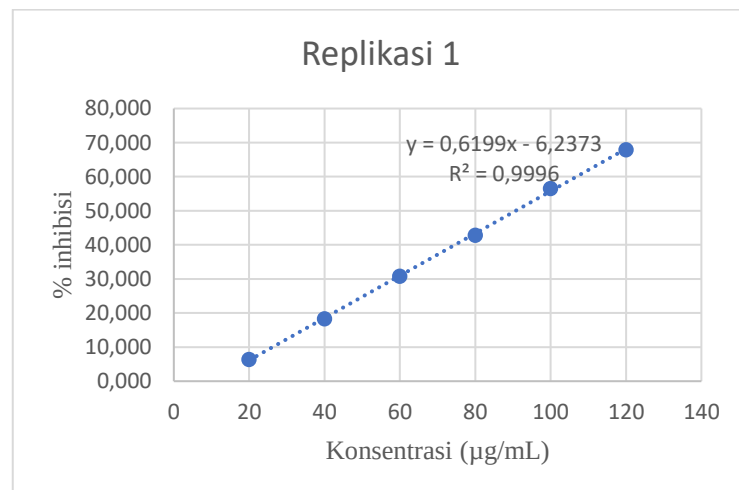
Konsentrasi (µg/mL)	Abs. Kontrol	Abs. Sampel		% inhibisi		IC50		Rata- rata IC50	SD
		1	2	1	2	1	2		
2	0,854	0,691	0,699	19,087	18,150	8,518	8,450	8,484	0,048
4	0,854	0,608	0,606	28,806	29,040				
6	0,854	0,555	0,552	35,012	35,363				
8	0,854	0,459	0,454	46,253	46,838				
10	0,854	0,358	0,355	58,080	58,431				
12	0,854	0,273	0,269	68,033	68,501				

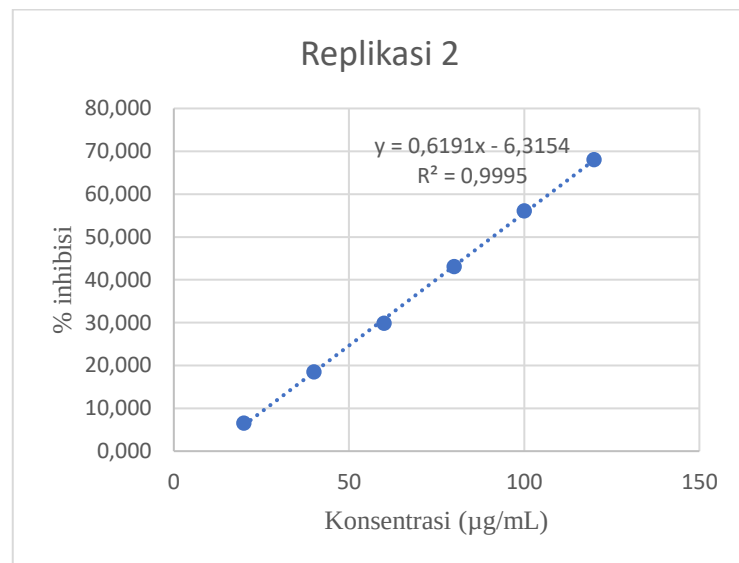




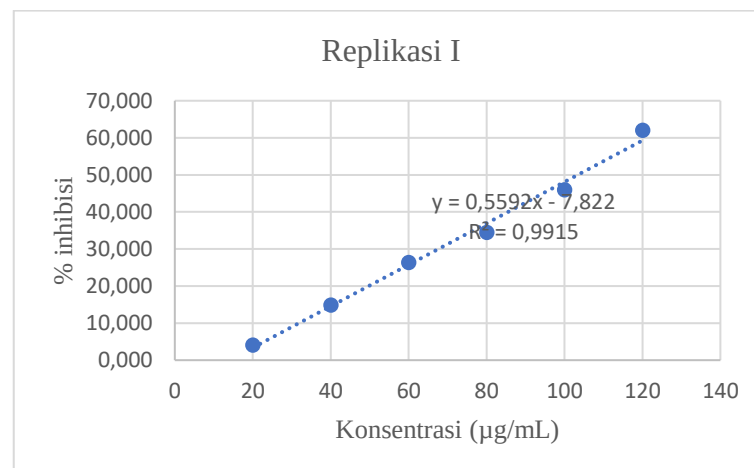
Formula 1

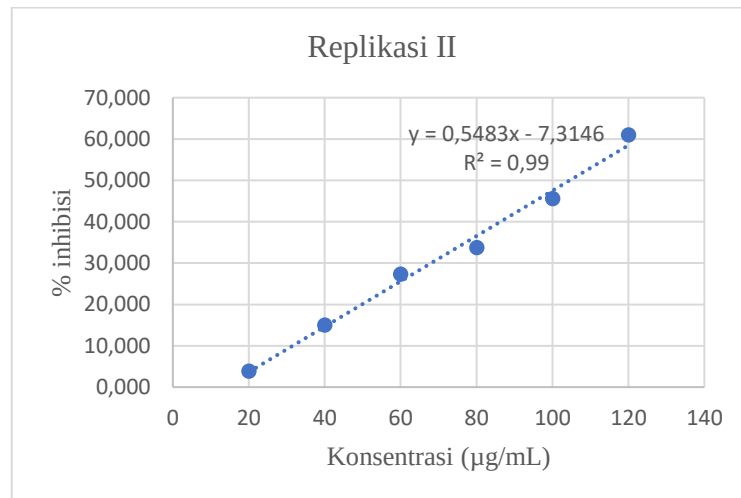
Konsentrasi (µg/mL)	Abs. Kontrol	Abs. Sampel		% inhibisi		IC50		Rata- rata IC50	SD
		1	2	1	2	1	2		
20	0,854	0,799	0,798	6,440	6,557	90,720	90,963	90,842	0,172
40	0,854	0,697	0,696	18,384	18,501				
60	0,854	0,591	0,599	30,796	29,859				
80	0,854	0,488	0,486	42,857	43,091				
100	0,854	0,371	0,375	56,557	56,089				
120	0,854	0,274	0,273	67,916	68,033				



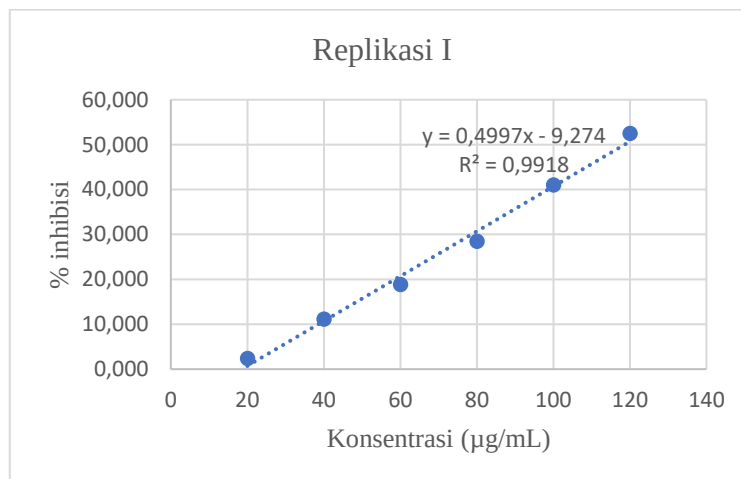
**Formula 2**

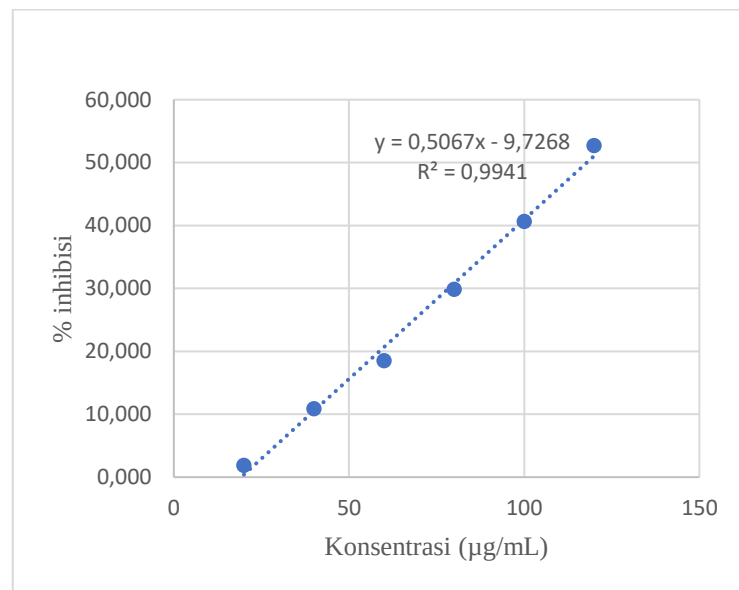
Konsentrasi (µg/mL)	Abs. Kontrol	Abs. Sampel		% inhibisi		IC50		Rata- rata IC50	SD
		1	2	1	2	1	2		
20	0,854	0,819	0,821	4,098	3,864	103,401	104,531	103,966	0,799
40	0,854	0,727	0,726	14,871	14,988				
60	0,854	0,629	0,621	26,347	27,283				
80	0,854	0,559	0,566	34,543	33,724				
100	0,854	0,461	0,465	46,019	45,550				
120	0,854	0,324	0,333	62,061	61,007				



**Formula 3**

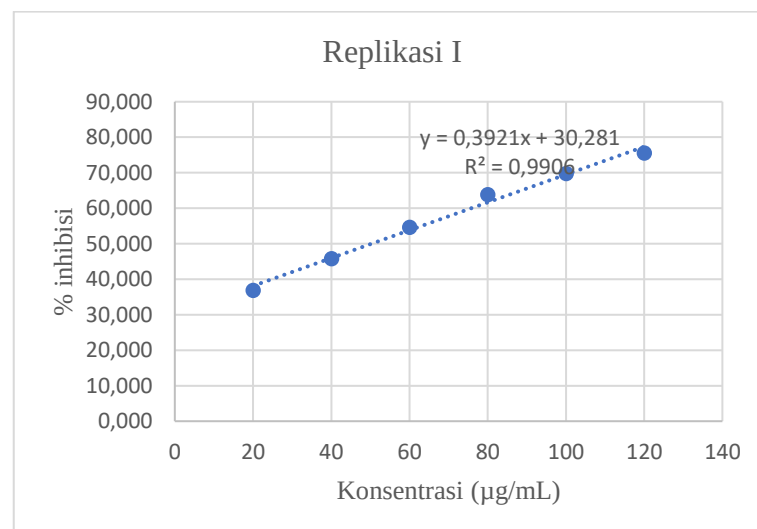
Konsentrasi (µg/mL)	Abs. Kontrol	Abs. Sampel		% inhibisi		IC50		Rata- rata IC50	SD
		1	2	1	2	1	2		
20	0,854	0,834	0,838	2,342	1,874	118,619	117,874	118,247	0,527
40	0,854	0,759	0,761	11,124	10,890				
60	0,854	0,693	0,696	18,852	18,501				
80	0,854	0,611	0,599	28,454	29,859				
100	0,854	0,504	0,507	40,984	40,632				
120	0,854	0,406	0,404	52,459	52,693				

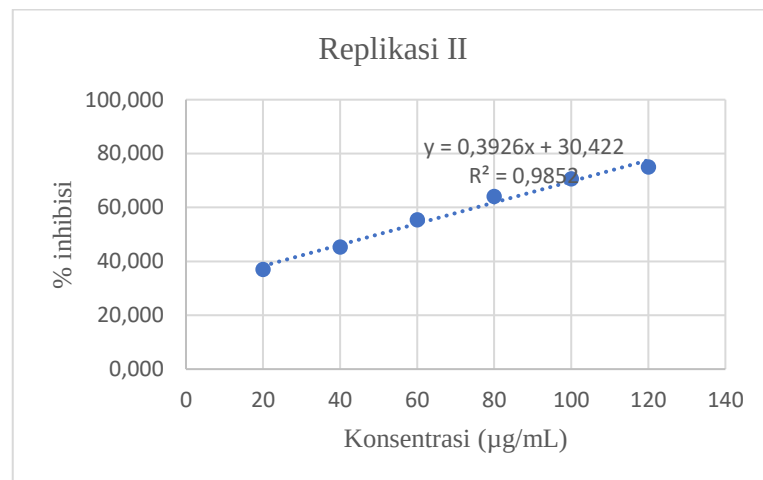




Kontrol (Kombucha)

Konsentrasi (µg/mL)	Abs. Kontrol	Abs. Sampel		% inhibisi		IC50		Rata- rata IC50	SD
		1	2	1	2	1	2		
20	0,854	0,539	0,538	36,885	37,002	50,291	49,868	50,079	0,299
40	0,854	0,463	0,467	45,785	45,316				
60	0,854	0,388	0,381	54,567	55,386				
80	0,854	0,309	0,307	63,817	64,052				
100	0,854	0,258	0,251	69,789	70,609				
120	0,854	0,209	0,213	75,527	75,059				





Sari Buah Belimbing Wuluh

Konsentrasi (µg/mL)	Abs. Kontrol	Abs. Sampel		% inhibisi		IC50		Rata- rata IC50	SD
		1	2	1	2	1	2		
20	0,854	0,821	0,824	3,864	3,513	192,606	193,460	193,033	0,604
40	0,854	0,769	0,765	9,953	10,422				
60	0,854	0,743	0,746	12,998	12,646				
80	0,854	0,691	0,697	19,087	18,384				
100	0,854	0,642	0,646	24,824	24,356				
120	0,854	0,586	0,584	31,382	31,616				

