



LAMPIRAN

Lampiran 1. Hasil Determinasi Jahe Merah

	<b>LEMBAGA ILMU PENGETAHUAN INDONESIA</b> <b>(INDONESIAN INSTITUTE OF SCIENCES)</b> <b>PUSAT PENELITIAN BIOLOGI</b> <b>(RESEARCH CENTER FOR BIOLOGY)</b> Cibinong Science Center, Jl. Raya Jakarta - Bogor KM. 46 Cibinong 16911 Telp. (+62 21) 87907636 - 87907604, Fax. 87907612 Website : www.biologi.lipi.go.id	
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Cibinong, 29 Maret 2021

Nomor : B-454/IV/DL.01/3/2021  
Lampiran : -  
Perihal : Hasil identifikasi/determinasi Tumbuhan

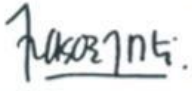
Kepada Yth.  
Bpk./Ibu/Sdr(j). **Boski Maulana**  
NIM : 20170311025  
Universitas Esa Unggul  
Fakultas Ilmu-Ilmu Kesehatan  
Jl. Arjuna Utara 9, Kebon Jeruk  
Jakarta 11510


Dengan hormat,


Bersama ini kami sampaikan hasil identifikasi/determinasi tumbuhan yang Saudara kirimkan ke "Herbarium Bogoriense", Bidang Botani Pusat Penelitian Biologi-LIPI Bogor, adalah sebagai berikut :

No.	No. Kol.	Jenis	Suku
1.	Jahe Merah	<i>Zingiber officinale</i> Roscoe var. <i>sunti</i> Val.	Zingiberaceae

Demikian, semoga berguna bagi Saudara.

Koordinator Program Penelitian Botani  
  
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*D:\Identifikasi Mahasiswa 2021\Boski Maulana.docx\Deni-Michael*

*Lampiran 2. Proses Panen Jahe Merah di Daerah Nerogtog Kec. Cipondoh Kota  
Tangerang*





*Lampiran 3. Pembagian Jahe Merah 2 kg tiap proses pengeringan (matahari langsung, matahari kain hitam, angin-angin dan dehidrator) dan sortasi basah*







*Lampiran 4 Proses Perajangan Simplisia Jahe Merah*





*Lampiran 5 Proses Pengeringan Jahe Merah (matahari langsung, matahari kain hitam, angin-angin dan dehidrator)*



*Lampiran 6. Hasil Simplisia Kering*



*Lampiran 7 Penimbangan Sampel Untuk Uji Kadar Air dan Abu, Pengujian Kadar Air dan Abu Simplisia dan Menghitung Hasil Pengujian Kadar Air & Abu Simplisia*

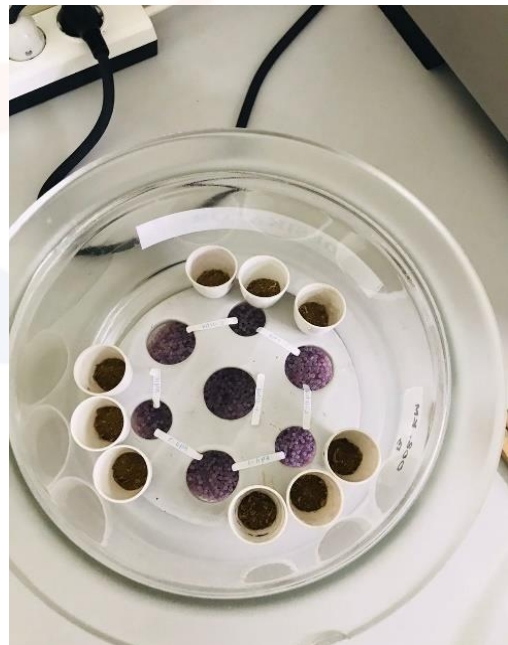
Data Pengunjian Kadar Abu

No	Simplisia	Berat sampel (gr)	Kadar Abu (%)	Rata-rata (%)	Rata-rata keseluruhan (%)
1	Jahe Merah Dehidrator	2,0027	16,413	16,4890	16,6757
			16,565		
		2,0009	16,747	16,8624	
			16,977		
2	Jahe Merah Matahari Langsung	2,0013	19,777	19,8471	20,7398
			19,917		
		2,0023	21,545	21,6326	
			21,720		
3	Jahe Merah Matahari Kain hitam	2,003	21,777	21,9196	21,3000
			22,062		
		2,0002	20,553	20,6804	
			20,808		
4	Jahe Merah Angin-angin	2,0002	18,983	19,0356	18,8521
			19,088		
		2,0004	18,621	18,6687	
			18,716		



No	Simplisia	Berat Sampel (gr)	Kadar Air (%)	Rata-rata (%)	Rata-rata Keseluruhan
1	Jahe Merah Dehidrator	1,0018	11,749	11,6539	11,6255
			11,559		
		1,0006	11,913	11,8378	
			11,793		
		1,0009	11,480	11,3847	
			11,290		
2	Jahe Merah Matahari Langsung	1,0003	12,426	12,3112	12,3473
			12,196		
		1,0005	11,574	12,4953	
			12,417		
		1,0012	12,305	12,2353	
			12,165		
3	Jahe Merah Matahari Kain Langsung	1,0007	14,070	14,0501	14,4089
			14,030		
		1,0004	15,243	14,8790	
			14,514		
		1,0008	14,349	14,2976	
			13,579		
4	Jahe Merah Angin-angin	1,0004	15,014	14,8940	14,9438
			14,774		
		1,001	15,335	15,0649	
			14,795		
		1,0027	14,930	14,8725	
			14,815		

Data Pengujian Kadar Air





*Lampiran 8. Grinder Hasil Pengeringan Jahe Merah Untuk Ekstraksi*



*Lampiran 9 Optimasi Suhu Microwave dengan waktu kisaran 0 – 30 menit*

**Optimasi Suhu microwave**

<b>0 menit</b>	<b>5 Menit</b>	<b>10 Menit</b>	<b>15 Menit</b>	<b>20 menit</b>	<b>30 menit</b>
<b>28° C</b>	<b>50° C</b>	<b>60° C</b>	<b>65° C</b>	<b>65° C</b>	<b>65° C</b>

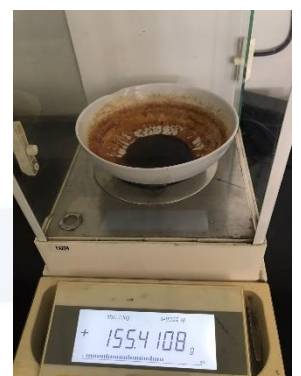
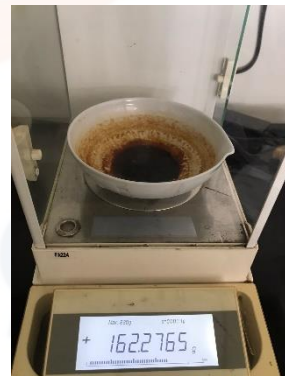
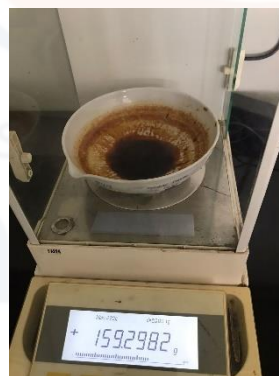
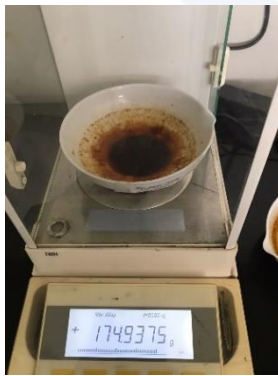




*Lampiran 10 Proses ekstraksi jahe merah dengan metode microwave*

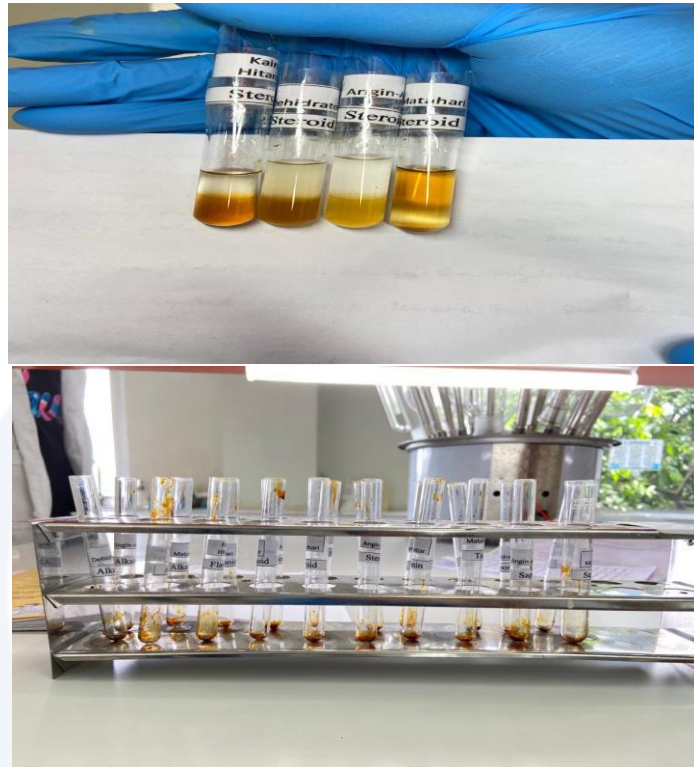


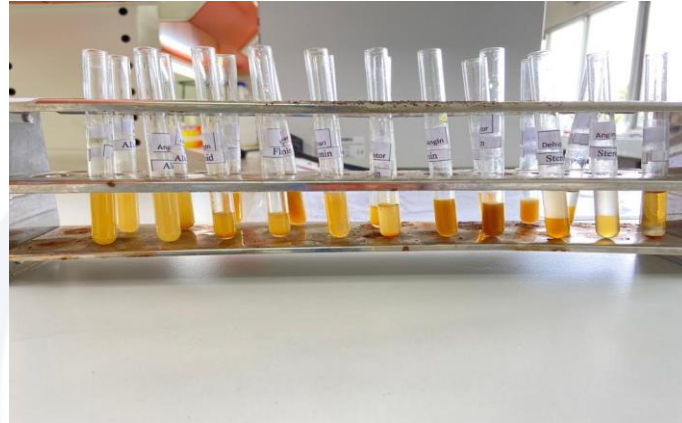
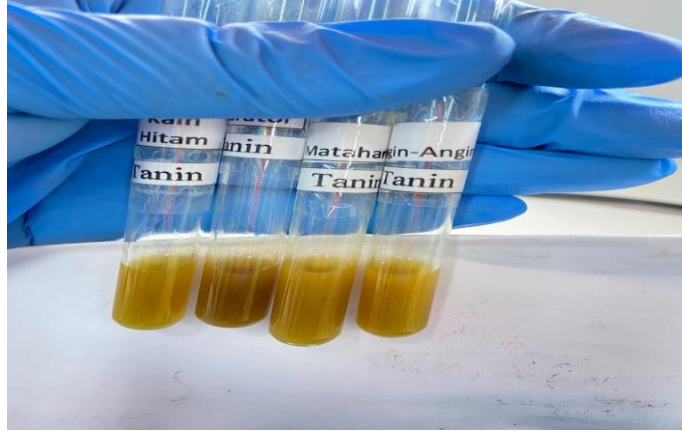
*Lampiran 11 Proses Pengeringan ekstrak Sampai Kental Menggunakan Waterbath dan Proses Penimbangan Ekstrak*





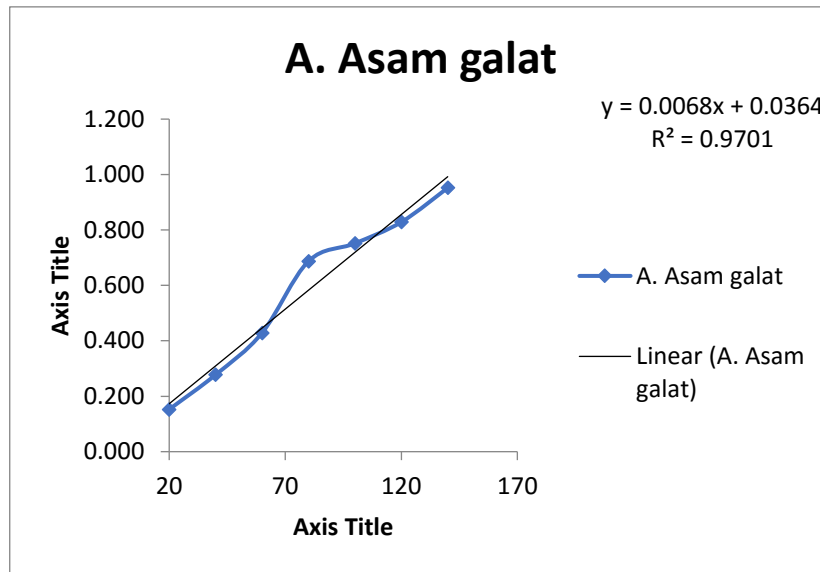
*Lampiran 12.. Pengujian Skrining Fitokimia Jahe Merah*



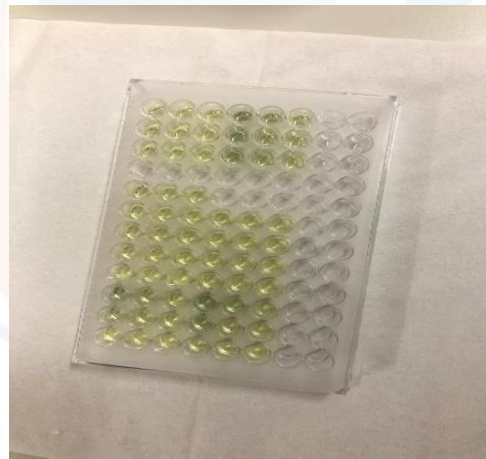
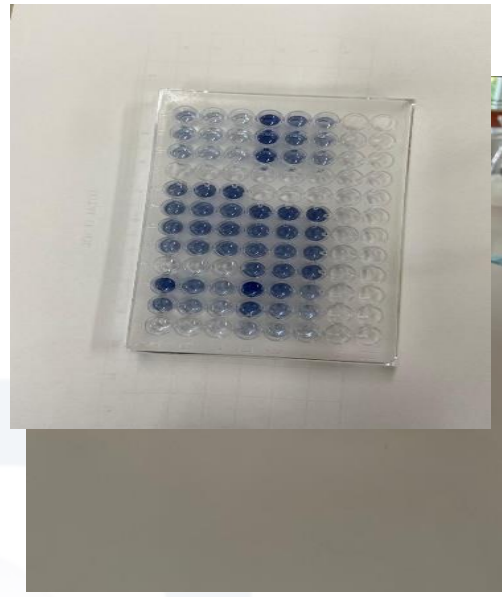




Lampiran 13. Optimasi dan pengujian kadar toral fenol



Sampel	Pengulangan	KTFe(mgGAE/gr)	Rata-rata KTFe(mgGAE/gr)	SD	KTF e ± SD(mgGAE/gr)
Matahari	1	93,629	102,33	8,97	102,33 ± 8,97
	2	101,829			
	3	111,543			
Kain hitam	1	91,314	91,42	0,76	91,42± 0,76
	2	92,229			
	3	90,714			
Angin-angin	1	105,286	109,01	4,53	109,01 ± 4,53
	2	107,686			
	3	114,057			
Dehidrator	1	112,771	114,92	2,23	114,92 ± 10,16
	2	117,229			
	3	114,771			





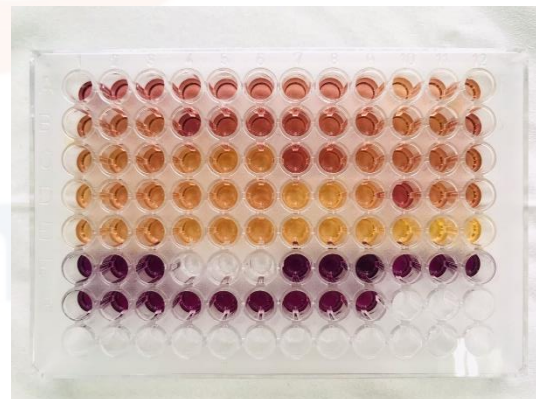
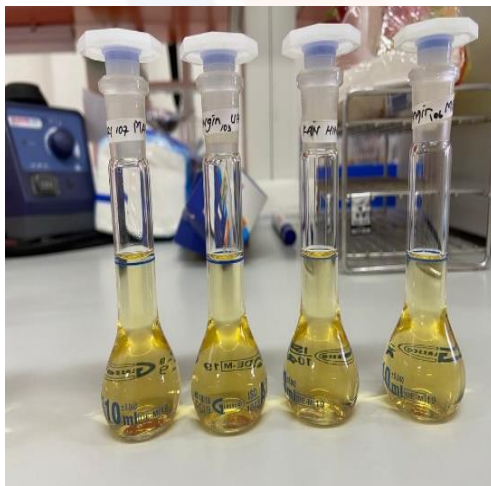
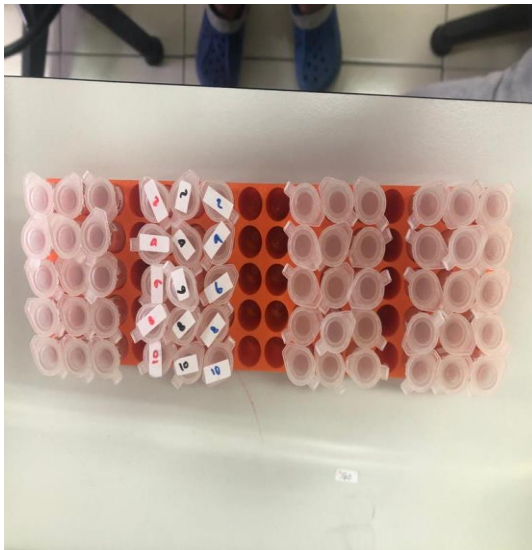
Lampiran 14 Pengujian antioksidan jahe merah

<b>Matahari</b>											
Konsentrasi	A.Pengulangan			A.Sampel			% Inhibisi			Rata2 % inhibisi	IC 50
	1	2	3	1	2	3	1	2	3		
100	0,8468	0,8682	0,8834	0,801	0,822	0,837	48,572	47,197	46,221	47,330	4,622
110	0,7444	0,7475	0,7119	0,698	0,701	0,666	55,149	54,950	57,236	55,778	
120	0,6765	0,6615	0,6289	0,630	0,615	0,583	59,510	60,474	62,567	60,850	
130	0,5502	0,634	0,5959	0,504	0,588	0,550	67,622	62,240	64,687	64,850	
140	0,5523	0,5839	0,5623	0,506	0,538	0,516	67,487	65,458	66,845	66,597	

<b>Kain Hitam</b>											
Konsentrasi	A.Pengulangan			A.Sampel			% Inhibisi			Rata2 % inhibisi	IC 50
	1	2	3	1	2	3	1	2	3		
100	0,9291	0,8889	0,92319	0,883	0,843	0,877	43,286	45,868	43,666	44,273	4,744
110	0,8402	0,8653	0,863	0,794	0,819	0,817	48,996	47,384	47,531	47,970	
120	0,8168	0,8307	0,8123	0,771	0,785	0,766	50,499	49,606	50,788	50,298	
130	0,7559	0,7481	0,5629	0,710	0,702	0,517	54,410	54,911	66,807	58,709	
140	0,742	0,7024	0,7361	0,696	0,656	0,690	55,303	57,847	55,682	56,277	

<b>Angin-Angin</b>											
Konsentrasi	A.Pengulangan			A.Sampel			% Inhibisi			Rata2 % inhibisi	IC 50
	1	2	3	1	2	3	1	2	3		
100	0,7922	0,7902	0,7565	0,746	0,744	0,710	52,079	52,207	54,372	52,886	4,600
110	0,695	0,6609	0,7033	0,649	0,615	0,657	58,322	60,512	57,789	58,874	
120	0,733	0,6856	0,5962	0,687	0,639	0,550	55,881	58,926	64,668	59,825	
130	0,593	0,5713	0,526	0,547	0,525	0,480	64,873	66,267	69,177	66,772	
140	0,3627	0,3166	0,2687	0,317	0,270	0,223	79,665	82,626	85,703	82,665	

<b>Dehidrator</b>											
Konsentrasi	A.Pengulangan			A.Sampel			% Inhibisi			Rata2 % inhibisi	IC 50
	1	2	3	1	2	3	1	2	3		
100	0,8528	0,8103	0,8086	0,807	0,764	0,763	48,187	50,916	51,026	50,043	4,535
110	0,5342	0,7157	0,65	0,488	0,670	0,604	68,650	56,992	61,212	62,285	
120	0,688	0,6921	0,6964	0,642	0,646	0,650	58,772	58,508	58,232	58,504	
130	0,5747	0,5786	0,5632	0,529	0,532	0,517	66,049	65,798	66,787	66,211	
140	0,6004	0,5726	0,5561	0,554	0,527	0,510	64,398	66,184	67,243	65,942	







## Certificate of Analysis

1.09001.0000 Folin-Ciocalteu's phenol reagent  
Batch HC15894101

### Batch Values

Equivalent acid	c(H <sup>+</sup> ) = 2 mol/l (2N)
Sensitivity (to phenol)	conforms
Sensitivity (to bovine serum albumin)	conforms

Date of release (DD.MM.YYYY) 22.04.2021  
Minimum shelf life (DD.MM.YYYY) 30.04.2026

Tom Kupfer  
Responsible laboratory manager quality control

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23, Vadhani Industrial Estate, L.B.S. Marg, Mumbai - 400086  
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Certificate of Analysis

Material Name: 2,2-Diphenyl-1-picrylhydrazyl

CAS Number : 1898-66-4

Material Code : MB263

Lot Number : 0000473772

Molecular Formula :  $C_{14}H_{12}N_2O_8$

Report No : 10000464112

TEST	SPECIFICATIONS	RESULTS
Appearance	Green to dark violet to black-gold to black crystals or powder or solid	Dark violet crystals
Solubility	33.3 mg soluble in 1 mL of dimethylformamide	Complies
FTIR	Matches with the standard pattern	Complies
DNases	None detected	Complies
RNases	None detected	Complies
Assay (HPLC)	$\geq 85.00\%$	99.99%

STATUS : APPROVED

QC Release Date : 2021-03-15

Expiry Date : 2025-03-08

  
Sarika Mandhane

Quality Control Chemist  
Chemical Division

  
P. R. Mistry

Manager, Quality Control  
Chemical Division

  
Pankaj Malankar

Manager, Quality Assurance  
Chemical Division

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Lampiran 16 sertifikat asam galat

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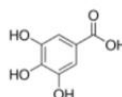
Email USA: [techserv@sial.com](mailto:techserv@sial.com)

Outside USA: [eurtechserv@sial.com](mailto:eurtechserv@sial.com)

**Certificate of Analysis**

Product Name:  
Gallic acid - 97.5-102.5%(titration)

Product Number: G7384  
Batch Number: SLBQ0358V  
Brand: SIGMA  
CAS Number: 149-91-7  
MDL Number: MFCD00002510  
Formula: C7H6O5  
Formula Weight: 170.12 g/mol  
Quality Release Date: 11 DEC 2015



Test	Specification	Result
Appearance (Color)	White to Beige	Off-White
Appearance (Form)	Powder	Powder
Solubility (Color)	Faint Yellow to Dark Yellow	Faint Yellow
Solubility (Turbidity)	Clear to Very Slightly Hazy	Clear
50 mg/mL, EtOH		
% Loss on Drying	≤ 10	4
Purity (GC)	≥ 98.5 %	100.0 %
Titration by NaOH (dry basis)	97.5 - 102.5 %	99.7 %

Rodney Burbach, Manager  
Analytical Services  
St. Louis, Missouri US

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