7. LAMPIRAN

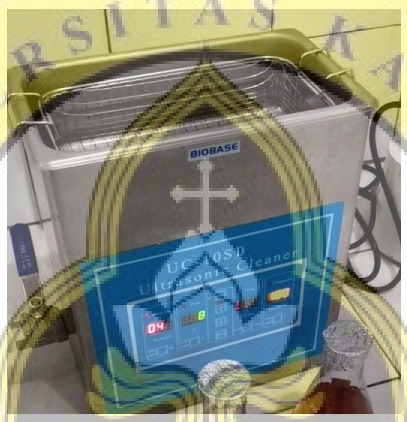
Lampiran 1. Foto Biji Pala

Lampiran 2. Foto Oleoresin Biji Pala

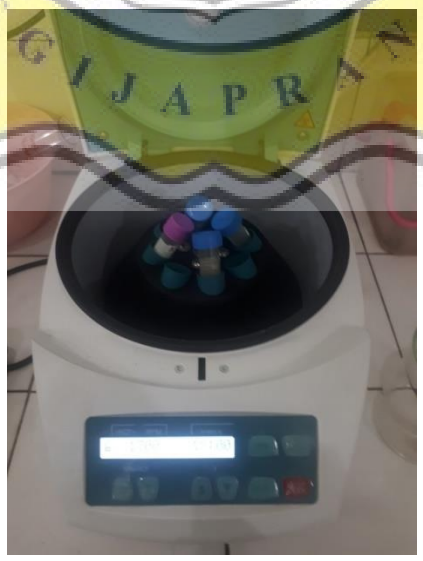
Lampiran 3. Foto Enkapsulat *Foam Mat Drying* Oleoresin Biji Pala

Lampiran 4. Foto Penyimpanan Enkapsulat Oleoresin Biji Pala Pada Desikator

Lampiran 5. Foto Uji *Trapped Oil* Enkapsulat Oleoresin Biji Pala

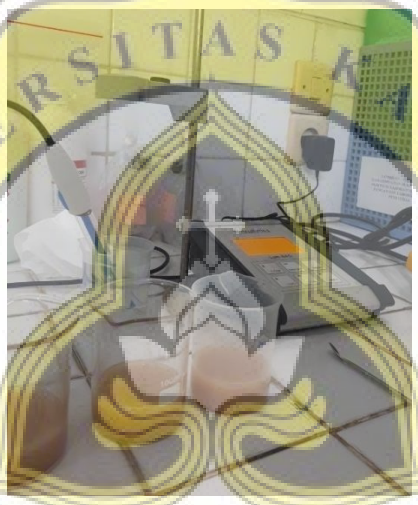


Lampiran 6. Foto Uji *Surface Oil* Enkapsulat Oleoresin Biji Pala



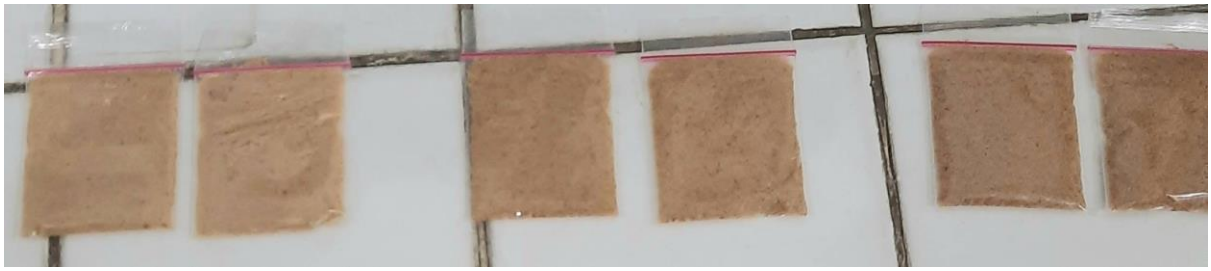
Lampiran 7. Uji Aktivitas Antioksidan Enkapsulat Oleoresin Biji Pala

Lampiran 8. Uji pH Enkapsulat Oleoresin Biji Pala



Lampiran 9. *Uji Chromameter* Enkapsulat Oleoresin Biji Pala

Lampiran 10. Foto Produk Selama Penyimpanan Urut dari Kiri ke Kanan Perlakuan Suhu 20°C; 30°C; 40°C



Lampiran 11. Hasil GCMS Enkapsulat Oleoresin Biji Pala

Peak Report TIC

Peak#	R.Time	Area	Area%	Height	Name
1	9.625	691443	27.20	167092	1-Phenyl-cyclopentanecarboxylic acid 2-dimethylamino-1-methyl-ethyl ester
2	12.624	368684	14.50	135481	(E)-6-Methyl-4-hepten-1-ol
3	19.588	545900	21.48	433510	TRANS-ISOCROWEACIN
4	19.885	400096	15.74	112932	N-(2,3,3a,4,7,7a-Hexahydro-2,5-dimethyl-1,3-dioxo-1H-isoindol-4-yl)-3-phenylpropiolamide
5	20.852	535822	21.08	191027	2-AMINOISOPHTHALIC ACID
		2541945	100.00	1040042	

Lampiran 12. Uji Normalitas *Trapped Oil*, *Surface Oil*, dan pH

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Trapped_20C	,164	27	,060	,955	27	,283
Trapped_30C	,099	27	,200*	,970	27	,597
Trapped_40C	,113	27	,200*	,963	27	,434
Surface_20C	,157	27	,086	,906	27	,018
Surface_30C	,144	27	,158	,932	27	,078
Surface_40C	,135	27	,200*	,929	27	,066
pH_20C	,153	27	,102	,935	27	,090
pH_30C	,131	27	,200*	,931	27	,073
pH_40C	,146	27	,145	,912	27	,026

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Lampiran 13. Uji Normalitas Aktivitas Antioksidan

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Antioksidan_20C	,167	21	,131	,960	21	,513
Antioksidan_30C	,175	21	,091	,945	21	,269
Antioksidan_40C	,105	21	,200*	,974	21	,824

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Lampiran 14. Uji Anova Aktivitas Antioksidan

ANOVA

Antioksidan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	20,142	2	10,071	1,713	,189
Within Groups	352,756	60	5,879		
Total	372,898	62			

Lampiran 15. Uji Duncan Antar Suhu Aktivitas Antioksidan

Antioksidan

Duncan[a]

Suhu	N	Subset for alpha = 0.05 1
40C	21	90,45543
20C	21	91,58110
30C	21	91,71710
Sig.		,116

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 21,000.

Lampiran 16. Uji Anova Tiap Suhu Aktivitas Antioksidan

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Antioksidan_20C	Between Groups	16,763	6	2,794	11,401	,000
	Within Groups	3,431	14	,245		
	Total	20,193	20			
Antioksidan_30C	Between Groups	12,916	6	2,153	3,669	,021
	Within Groups	8,214	14	,587		
	Total	21,130	20			
Antioksidan_40C	Between Groups	37,455	6	6,242	5,930	,003
	Within Groups	14,738	14	1,053		
	Total	52,193	20			

Lampiran 17. Uji Duncan Aktivitas Antioksidan suhu 20°C

Antioksidan_20C

Duncan[a]

Week	N	Subset for alpha = 0.05			
		1	2	3	4
W7	3	90,93600			
W5	3	91,61900	91,61900		
W6	3	91,64733	91,64733		
W8	3		91,91300		
W1	3		92,10733	92,10733	
W3	3			92,96967	
W0	3				93,83800
Sig.		,116	,283	,051	1,000

Means for groups in homogeneous subsets are displayed.

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

Lampiran 18. Uji Duncan Aktivitas Antioksidan suhu 30°C

Antioksidan_30C

Duncan[a]

Week	N	Subset for alpha = 0.05		
		1	2	3
W7	3	91,64500		
W3	3	91,66700		
W6	3	91,93733	91,93733	
W5	3	91,94300	91,94300	
W8	3	92,05400	92,05400	
W1	3		93,19167	93,19167
W0	3			93,83800
Sig.		,562	,084	,319

Means for groups in homogeneous subsets are displayed.

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

Lampiran 19. Uji Duncan Aktivitas Antioksidan suhu 20°C

Antioksidan_40C

Duncan[a]

Week	N	Subset for alpha = 0.05			
		1	2	3	4
W7	3	90,34933			
W8	3	90,36300			
W3	3	90,91000	90,91000		
W6	3	91,76433	91,76433	91,76433	
W5	3		92,34567	92,34567	92,34567
W1	3			93,56400	93,56400
W0	3				93,83800
Sig.		,141	,125	,060	,112

Means for groups in homogeneous subsets are displayed.

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

Lampiran 20. Uji Anova Tiap Suhu *Trapped Oil, Surface Oil*, dan pH

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Trapped_20C	Between Groups	,001	8	,000	1,938	,116
	Within Groups	,002	18	,000		
	Total	,003	26			
Trapped_30C	Between Groups	,001	8	,000	1,393	,265
	Within Groups	,001	18	,000		
	Total	,002	26			
Trapped_40C	Between Groups	,001	8	,000	1,814	,140
	Within Groups	,001	18	,000		
	Total	,002	26			
Surface_20C	Between Groups	,002	8	,000	3,944	,007
	Within Groups	,001	18	,000		
	Total	,003	26			
Surface_30C	Between Groups	,002	8	,000	5,102	,002
	Within Groups	,001	18	,000		
	Total	,003	26			
Surface_40C	Between Groups	,001	8	,000	2,171	,082
	Within Groups	,001	18	,000		
	Total	,002	26			
pH_20C	Between Groups	1,037	8	,130	15,507	,000
	Within Groups	,150	18	,008		
	Total	1,187	26			
pH_30C	Between Groups	,459	8	,057	33,401	,000
	Within Groups	,031	18	,002		
	Total	,490	26			
pH_40C	Between Groups	,959	8	,120	25,064	,000
	Within Groups	,086	18	,005		
	Total	1,046	26			

Lampiran 21. Uji Anova *Trapped Oil, Surface Oil*, dan pH

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
pH	Between Groups	,924	2	,462	13,246	,000
	Within Groups	2,721	78	,035		
	Total	3,646	80			
Trapped	Between Groups	,001	2	,000	3,028	,054
	Within Groups	,007	78	,000		
	Total	,008	80			
Surface	Between Groups	,001	2	,000	3,213	,046
	Within Groups	,008	78	,000		
	Total	,008	80			

Lampiran 22. Uji Duncan Antar Suhu *Trapped Oil*

Trapped

Duncan[a]

Suhu	N	Subset for alpha = 0.05	
		1	2
20C	27	,06693	
40C	27		,07230
30C	27		,07259
Sig.		1,000	,909

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 27,000.

Lampiran 23. Uji Duncan *Trapped Oil* Suhu 20°C

Trapped_20C

Duncan[a]

Week	N	Subset for alpha = 0.05	
		1	2
W2	3	,05467	
W3	3	,06333	
W1	3	,06367	
W5	3	,06667	,06667
W6	3	,06667	,06667
W4	3	,06700	,06700
W7	3	,06700	,06700
W8	3	,07033	,07033
W0	3		,08300
Sig.		,086	,070

Means for groups in homogeneous subsets are displayed.

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

Lampiran 24. Uji Duncan *Trapped Oil* Suhu 30°C

Trapped_30C

Duncan[a]

Week	N	Subset for alpha = 0.05	
		1	2
W1	3	,06567	
W7	3	,06567	
W2	3	,06867	,06867
W8	3	,06867	,06867
W6	3	,07400	,07400
W4	3	,07533	,07533
W3	3	,07533	,07533
W5	3	,07700	,07700
W0	3		,08300
Sig.		,171	,086

Means for groups in homogeneous subsets are displayed.

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

Lampiran 25. Uji Duncan *Trapped Oil* Suhu 40°C

Trapped_40C

Duncan[a]

Week	N	Subset for alpha = 0.05	
		1	2
W8	3	,06200	
W2	3	,06500	
W1	3	,07100	,07100
W3	3	,07133	,07133
W7	3	,07333	,07333
W6	3	,07367	,07367
W5	3	,07400	,07400
W4	3	,07733	,07733
W0	3		,08300
Sig.		,053	,121

Means for groups in homogeneous subsets are displayed.

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

Lampiran 26. Uji Duncan Antar Suhu *Surface Oil*

Surface

Duncan[a]

Suhu	N	Subset for alpha = 0.05	
		1	2
40C	27	,07900	
30C	27	,08044	,08044
20C	27		,08552
Sig.		,594	,064

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 27,000.

Lampiran 27. Uji Duncan *Surface Oil* Suhu 20°C

Surface_20C

Duncan[a]

Week	N	Subset for alpha = 0.05			
		1	2	3	4
W0	3	,07033			
W8	3	,07633	,07633		
W7	3	,08100	,08100	,08100	
W5	3	,08333	,08333	,08333	
W6	3		,08633	,08633	,08633
W1	3		,09000	,09000	,09000
W4	3		,09067	,09067	,09067
W3	3			,09333	,09333
W2	3				,09833
Sig.		,070	,054	,094	,099

Means for groups in homogeneous subsets are displayed.

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

Lampiran 28. Uji Duncan *Surface Oil* Suhu 30°C

Surface_30C

Duncan[a]

Week	N	Subset for alpha = 0.05		
		1	2	3
W0	3	,07033		
W4	3	,07267	,07267	
W6	3	,07300	,07300	
W5	3	,07733	,07733	
W8	3	,07933	,07933	
W7	3	,08167	,08167	
W2	3		,08467	
W3	3		,08500	
W1	3			,10000
Sig.		,090	,069	1,000

Means for groups in homogeneous subsets are displayed.

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

Lampiran 29. Uji Duncan *Surface Oil* Suhu 40°C

Surface_40C

Duncan[a]

Week	N	Subset for alpha = 0.05	
		1	2
W0	3	,07033	
W3	3	,07333	
W7	3	,07333	
W6	3	,07567	,07567
W4	3	,07833	,07833
W1	3	,08200	,08200
W5	3	,08400	,08400
W8	3	,08467	,08467
W2	3		,08933
Sig.		,054	,061

Means for groups in homogeneous subsets are displayed.

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

Lampiran 30. Uji Duncan Antar Suhu pH

pH

Duncan[a]

Suhu	N	Subset for alpha = 0.05	
		1	2
30C	27	5,13148	
40C	27	5,17185	
20C	27		5,37556
Sig.		,430	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 27,000.

Lampiran 31. Uji Duncan pH Suhu 20°C

pH_20C

Duncan[a]

Week	N	Subset for alpha = 0.05				
		1	2	3	4	5
W7	3	5,1167				
W5	3	5,1733				
W8	3	5,2350	5,2350			
W4	3	5,2667	5,2667			
W6	3		5,3550	5,3550		
W0	3		5,4000	5,4000		
W3	3			5,4667	5,4667	
W2	3				5,6133	5,6133
W1	3					5,7500
Sig.		,080	,056	,173	,065	,084

Means for groups in homogeneous subsets are displayed.

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

Lampiran 32. Uji Duncan pH Suhu 30°C

pH_30C

Duncan[a]

Week	N	Subset for alpha = 0.05			
		1	2	3	4
W8	3	4,9800			
W5	3	4,9900			
W3	3	5,0333			
W6	3	5,0433			
W4	3		5,1333		
W7	3		5,1400		
W1	3			5,2167	
W2	3			5,2467	
W0	3				5,4000
Sig.		,102	,846	,387	1,000

Means for groups in homogeneous subsets are displayed.

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

Lampiran 33. Uji Duncan pH Suhu 40°C

pH_40C

Duncan[a]

Week	N	Subset for alpha = 0.05			
		1	2	3	4
W6	3	4,9333			
W5	3	4,9500			
W7	3	4,9633			
W8	3		5,0900		
W3	3		5,1633	5,1633	
W4	3			5,2433	
W1	3				5,3833
W0	3				5,4000
W2	3				5,4200
Sig.		,622	,211	,174	,547

Means for groups in homogeneous subsets are displayed.

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

Lampiran 34. Uji Korelasi pH, *Trapped Oil*, dan *Surface Oil*

Correlations

		pH	Trapped	Surface
pH	Pearson Correlation	1	-,239*	,316**
	Sig. (2-tailed)		,032	,004
	Sum of Squares and Cross-products	3,646	-,040	,055
	Covariance	,046	,000	,001
	N	81	81	81
Trapped	Pearson Correlation	-,239*	1	-,714**
	Sig. (2-tailed)	,032		,000
	Sum of Squares and Cross-products	-,040	,008	-,006
	Covariance	,000	,000	,000
	N	81	81	81
Surface	Pearson Correlation	,316**	-,714**	1
	Sig. (2-tailed)	,004	,000	
	Sum of Squares and Cross-products	,055	-,006	,008
	Covariance	,001	,000	,000
	N	81	81	81

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Lampiran 35. Hasil Plagiasi Skripsi

7.94% PLAGIARISM APPROXIMATELY

Report #11221872

PENDAHULUANLatar BelakangSejak zaman dahulu Indonesia terkenal dengan kekayaan rempah-rempahnya. Kekayaan rempah-rempah tersebut tersebar diseluruh pulau di Indonesia. Pala merupakan tanaman asli Indonesia yang berasal dari pulau Banda Provinsi Maluku. Tanaman pala dapat tumbuh dengan baik di daerah tropis. [4] Pala merupakan salah satu rempah yang mempunyai nilai ekonomis serta multiguna karena pada setiap bagian dari tanamannya dapat dimanfaatkan dan diolah lebih lanjut. [4] [21] [22] Minyak yang berasal dari biji fuli dan daun pala banyak digunakan untuk industri obat-obatan, parfum, dan kosmetik. [4] Pala merupakan salah satu komoditas ekspor yang penting untuk Indonesia karena Indonesia merupakan negara pengekspor biji dan fuli pala terbesar yang memasok sekitar 60% kebutuhan pala dunia (Nurdjannah, 2007). Salah satu hasil olahan ekstraksi dari pala adalah oleoresin. [1] Oleoresin merupakan zat kimia yang berbentuk minyak kental yang memiliki sifat asli seperti bahan bakunya yang terdiri dari campuran minyak atsiri dan resin. Beberapa kegunaan dari oleoresin adalah sebagai penambah citarasa pada industri makanan dan minuman, industri kosmetika, sabun, dan sebagai ramuan dalam industri farmasi. Mutu dari oleoresin dapat dipengaruhi oleh beberapa faktor seperti jenis tanaman dan umur panen, perlakuan bahan sebelum proses