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APPENDICES

Appendix 1. Modified Cold Pressed Expeller

Appendix 2. Cold Pressed Candlenut Oil

Appendix 2. Cold Pressed Candlenut Oil

Appendix 3. Microbial Analysis for self-cold pressed Candlenut Oil

The	Sample	Repetition	Dilutions						Number of Colonies (CFU/mL)	
			10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	ISO	BAM
1	Candlenut oil before autoclaved	1	25	0	**43**	**56**	1	36	$5,9 \times 10^4$	$5,9 \times 10^4$
		2	0	0	**25**	1	TNTC	0		

Appendix 4. Omega content for self-pressed candlenut oil

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No	Parameter	Unit	Simplo	Duplo	Limit Of Detection	Method
1	C 18:3 W6 (Linolenic Acid / W6)	%	0.12	0.12	-	18-6-1/MU/SMM-SIG (GC-FID)
2	C 18:3 W3 (Linolenic Acid / W3)	%	28.57	28.63	-	18-6-1/MU/SMM-SIG (GC-FID)
3	DHA	mg / 100 g	Not detected	Not detected	1.2	18-6-1/MU/SMM-SIG (GC-FID)
4	EPA	mg / 100 g	Not detected	Not detected	1.25	18-6-1/MU/SMM-SIG (GC-FID)
5	Omega 3 Fatty Acids	mg / 100 g	28572.7	28631.0	-	18-6-1/MU/SMM-SIG (GC-FID)
6	Omega 6 Fatty Acids	mg / 100 g	39974.3	40000.8	-	18-6-1/MU/SMM-SIG (GC-FID)
7	Omega 9 Fatty Acids	mg / 100 g	21980.3	22021.0	-	18-6-1/MU/SMM-SIG (GC-FID)
8	Linolenic Acid	%	28.69	28.75	-	18-6-1/MU/SMM-SIG (GC-FID)

Bogor, April 13, 2023
PT. Saraswanti Indo Genetech

Dwi Yulianto Laksono, S.Si
General Laboratory Manager

Louisa Aileen

Appendix 5. Omega content for cold pressed candlenut oil from e-commerce

No	Parameter	Unit	Simplo	Duplo	Limit Of Detection	Method
1	Omega 3 Fatty Acids	mg / 100 g	875.1	875.5	-	18-6-1/MU/SMM-SIG (GC-FID)
2	Omega 6 Fatty Acids	mg / 100 g	13201.1	13224.9	-	18-6-1/MU/SMM-SIG (GC-FID)
3	Omega 9 Fatty Acids	mg / 100 g	46443.7	46472.9	-	18-6-1/MU/SMM-SIG (GC-FID)

Bogor, March 17, 2023
PT. Saraswanti Indo Genetech

Dwi Yulianto Laksono, S.Si
General Laboratory Manager

Result Of Analysis | Page 2 of 2
The results of these tests relate only to the sample(s) submitted.
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Louisa Aileen

Appendix 6 Microbial Analysis Candlenut Oil after Autoclave

The	Sample	Repetition	Dilutions						Number of Colonies (CFU/mL)	
			10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	ISO	BAM
1	Candlenut oil after autoclaved	1	0	0	0	3	1	0	$<1,0 \times 10^1$	$<2,5 \times 10^1$
		2	0	1	0	1	4	0		

Appendix 7 Omega Content of Candlenut Oil after Autoclave

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No	Parameter	Unit	Simplo	Duplo	Limit Of Detection	Method
1	Omega 3 Fatty Acids	mg / 100 g	23520.1	23528.9	-	18-6-1/MU/SMM-SIG (GC-FID)
2	Omega 6 Fatty Acids	mg / 100 g	41321.0	41340.0	-	18-6-1/MU/SMM-SIG (GC-FID)
3	Omega 9 Fatty Acids	mg / 100 g	25300.1	25293.1	-	18-6-1/MU/SMM-SIG (GC-FID)

Bogor, June 06, 2023
PT. Saraswanti Indo Genetech

Dwi Yulianto Laksono, S.Si
General Laboratory Manager

Result Of Analysis | Page 2 of 2
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Appendix 7 Statistic Analysis for Omega Content

t-Test: Paired Two Sample for Means		
	Variable 1	Variable 2
Mean	90590,05	90151,6
Variance	7875,125	216,32
Observations	2	2
Pearson Corr	1	
Hypothesized	0	
df	1	
t Stat	8,37535817	
P(T<=t) one-	0,03782645	
t Critical one	6,31375151	
P(T<=t) two-	0,07565291	
t Critical two	12,7062047	

Appendix 8 Low Energy Method Nano Emulsion
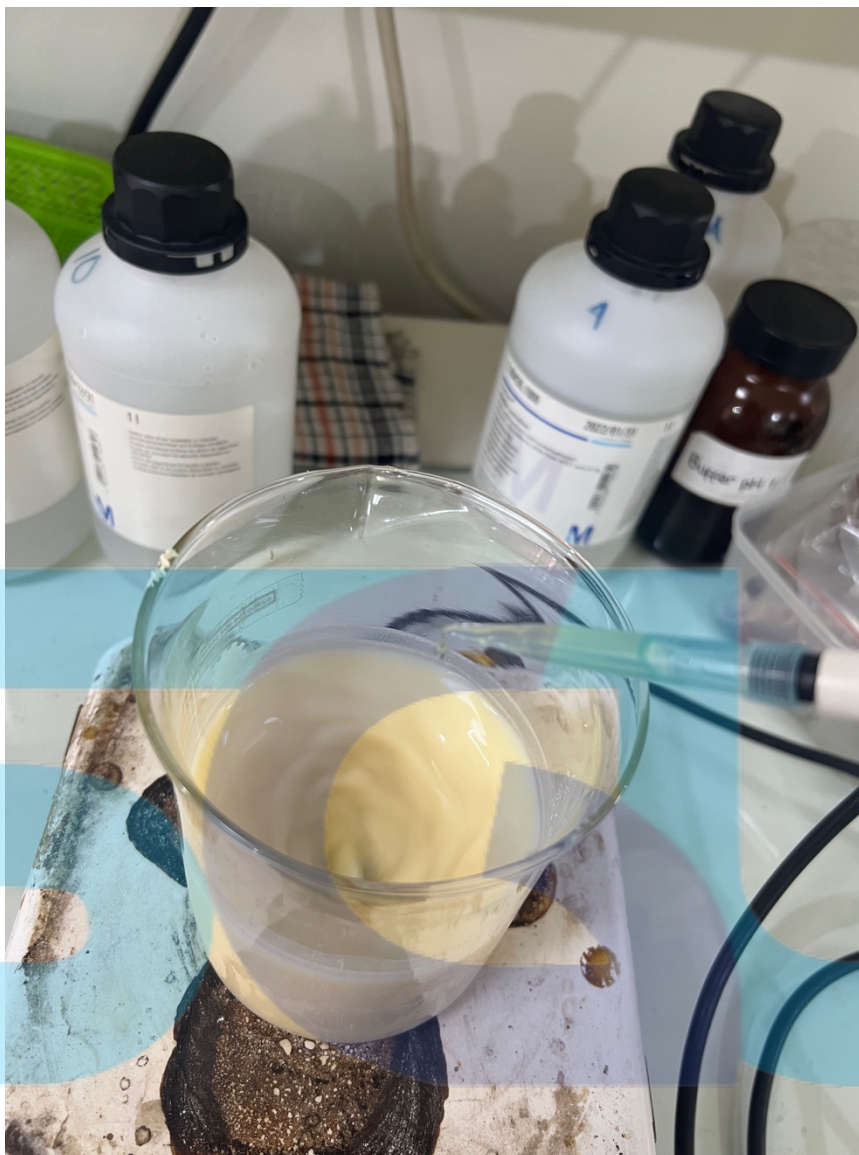
Appendix 9 Statistical Analysis Regression Test for pH measurement

Ratio 1:1:1 with 8% Sweetness at 30°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9591457
R Square	0,91996047
Adjusted R S	0,89328063
Standard Err	0,04774935
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0,07861778	0,07861778	34,4814815	0,0098517
Residual	3	0,00684	0,00228		
Total	4	0,08545778			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	5,354	0,03698648	144,755581	7,2693E-07	5,2362925	5,4717075	5,2362925	5,4717075
day	0,01266667	0,0021571	5,87209345	0,0098517	0,00580183	0,01953151	0,00580183	0,01953151

Ratio 1:1:1 with 10% Sweetness at 30°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,92866481
R Square	0,86241833
Adjusted R S	0,81655778
Standard Err	0,06441474
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0,07802778	0,07802778	18,8052308	0,02262492
Residual	3	0,01244778	0,00414926		
Total	4	0,09047556			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	5,396	0,04989545	108,146142	1,743E-06	5,23721042	5,55478958	5,23721042	5,55478958
day	0,01261905	0,00290996	4,33649984	0,02262492	0,00335825	0,02187984	0,00335825	0,02187984

Ratio 5:1:1 with 8% Sweetness at 30°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,94766223
R Square	0,8980637
Adjusted R S	0,86408493
Standard Err	0,06356099
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0,10677778	0,10677778	26,430143	0,01425993
Residual	3	0,01212	0,00404		
Total	4	0,11889778			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	5,216	0,04923413	105,942758	1,854E-06	5,05931501	5,37268499	5,05931501	5,37268499
day	0,0147619	0,00287139	5,14102548	0,01425993	0,00562385	0,02389996	0,00562385	0,02389996

Ratio 5:1:1 with 10% Sweetness at 30°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,95661247
R Square	0,91510742
Adjusted R S	0,8868099
Standard Err	0,06932479
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0,15541778	0,15541778	32,3387792	0,01077791
Residual	3	0,01441778	0,00480593		
Total	4	0,16983556			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	5,17266667	0,05369875	96,3275092	2,4663E-06	5,00177328	5,34356005	5,00177328	5,34356005
day	0,01780952	0,00313177	5,68671954	0,01077791	0,00784282	0,02777623	0,00784282	0,02777623

Ratio 1:1:1 with 8% Sweetness at 40°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,91053027
R Square	0,82906536
Adjusted R S	0,77208715
Standard Err	0,03564745
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0,01849	0,01849	14,5505683	0,03169072
Residual	3	0,00381222	0,00127074		
Total	4	0,02230222			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	5,36866667	0,0276124	194,42958	3,0001E-07	5,2807917	5,45654164	5,2807917	5,45654164
day	0,00614286	0,00161039	3,81452072	0,03169072	0,00101788	0,01126783	0,00101788	0,01126783

Ratio 1:1:1 with 10% Sweetness at 40°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,91612538
R Square	0,83928571
Adjusted R S	0,78571429
Standard Err	0,02503331
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0,00981778	0,00981778	15,6666667	0,02878982
Residual	3	0,00188	0,00062667		
Total	4	0,01169778			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	5,43466667	0,01939072	280,271533	1,0016E-07	5,37295674	5,49637659	5,37295674	5,49637659
day	0,00447619	0,00113089	3,95811403	0,02878982	0,00087719	0,00807519	0,00087719	0,00807519

Ratio 5:1:1 with 8% Sweetness at 40°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,95471698
R Square	0,91148452
Adjusted R S	0,88197936
Standard Err	0,03148192
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0,03061778	0,03061778	30,8923767	0,01148854
Residual	3	0,00297333	0,00099111		
Total	4	0,03359111			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	5,22066667	0,02438579	214,086443	2,2473E-07	5,14306021	5,29827313	5,14306021	5,29827313
day	0,00790476	0,00142221	5,5580911	0,01148854	0,00337866	0,01243086	0,00337866	0,01243086

Ratio 5:1:1 with 10% Sweetness at 40°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,92257638
R Square	0,85114717
Adjusted R S	0,80152957
Standard Err	0,0397026
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0,02704	0,02704	17,1541353	0,02555848
Residual	3	0,00472889	0,0015763		
Total	4	0,03176889			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	5,208	0,0307535	169,346577	4,5403E-07	5,11012864	5,30587136	5,11012864	5,30587136
day	0,00742857	0,00179358	4,1417551	0,02555848	0,0017206	0,01313655	0,0017206	0,01313655

Appendix 10 Statistical Analysis Slope Test for pH measurement

Ratio 1:1:1 with 8% Sweetness at 30°C and 40°C

Day	30°C	40°C	ln(A)	ln(B)
0	5,39	5,39	1,6845	1,6845
7	5,44	5,42	1,6932	1,6895
14	5,48	5,42	1,7017	1,6895
21	5,59	5,47	1,7210	1,6999
28	5,7566667	5,58	1,7504	1,7186

SLOPE ANALYSIS

	0th Order		1st Order	
n	5	5	5	5
R^2	0,92	0,83	0,92	0,83
Slope	0,01	0,01	0,00	0,00
k	0,01	0,01	0,00	0,00
intercept	5,35	5,37	1,68	1,68
Sy.x	0,05	0,04	0,01	0,01
sx	11,07	11,07	11,07	11,07
Sb	0,00	0,00	0,00	0,00
Sb1.b2	0,00		0,00	
t	2,42		2,43	
df	6		6	
alpha	0,05		0,05	
pvalue	0,0516180		0,05	

Ratio 1:1:1 with 10% Sweetness at 30°C and 40°C

Day	30°C	40°C	ln(A)	ln(B)
0	5,45	5,45	1,6962	1,6962
7	5,46	5,46	1,6974	1,6974
14	5,49	5,48	1,7029	1,7011
21	5,67	5,51	1,7352	1,7060
28	5,79	5,59	1,7561	1,7204

SLOPE ANALYSIS

	0th Order		1st Order	
n	5	5	5	5
R^2	0,86	0,84	0,86	0,84
Slope	0,01	0,00	0,00	0,00
k	0,01	0,00	0,00	0,00
intercept	5,40	5,43	1,69	1,69
Sy.x	0,06	0,03	0,01	0,00
sx	11,07	11,07	11,07	11,07
Sb	0,00	0,00	0,00	0,00
Sb1.b2	0,00		0,00	
t	2,61		2,60	
df	6		6	
alpha	0,05		0,05	
pvalue	0,0402157		0,04	

Ratio 5:1:1 with 8% Sweetness at 30°C and 40°C

Day	30°C	40°C	ln(A)	ln(B)
0	5,24	5,24	1,6563	1,6563
7	5,35	5,28	1,6765	1,6639
14	5,36	5,30	1,6790	1,6671
21	5,47	5,37	1,6999	1,6802
28	5,6933333	5,47	1,7393	1,6999

SLOPE ANALYSIS

	0th Order		1st Order	
n	5	5	5	5
R^2	0,90	0,91	0,90	0,91
Slope	0,01	0,01	0,00	0,00
k	0,01	0,01	0,00	0,00
intercept	5,22	5,22	1,65	1,65
Sy.x	0,06	0,03	0,01	0,01
sx	11,07	11,07	11,07	11,07
Sb	0,00	0,00	0,00	0,00
Sb1.b2	0,00		0,00	
t	2,14		2,15	
df	6		6	
alpha	0,05		0,05	
pvalue	0,0761527		0,08	

Ratio 5:1:1 with 10% Sweetness at 30°C and 40°C

Day	30°C	40°C	ln(A)	ln(B)
0	5,24	5,24	1,6557	1,6557
7	5,27	5,26	1,6614	1,6595
14	5,34	5,27	1,6746	1,6627
21	5,55	5,34	1,7144	1,6746
28	5,7166667	5,46	1,7434	1,6968

SLOPE ANALYSIS

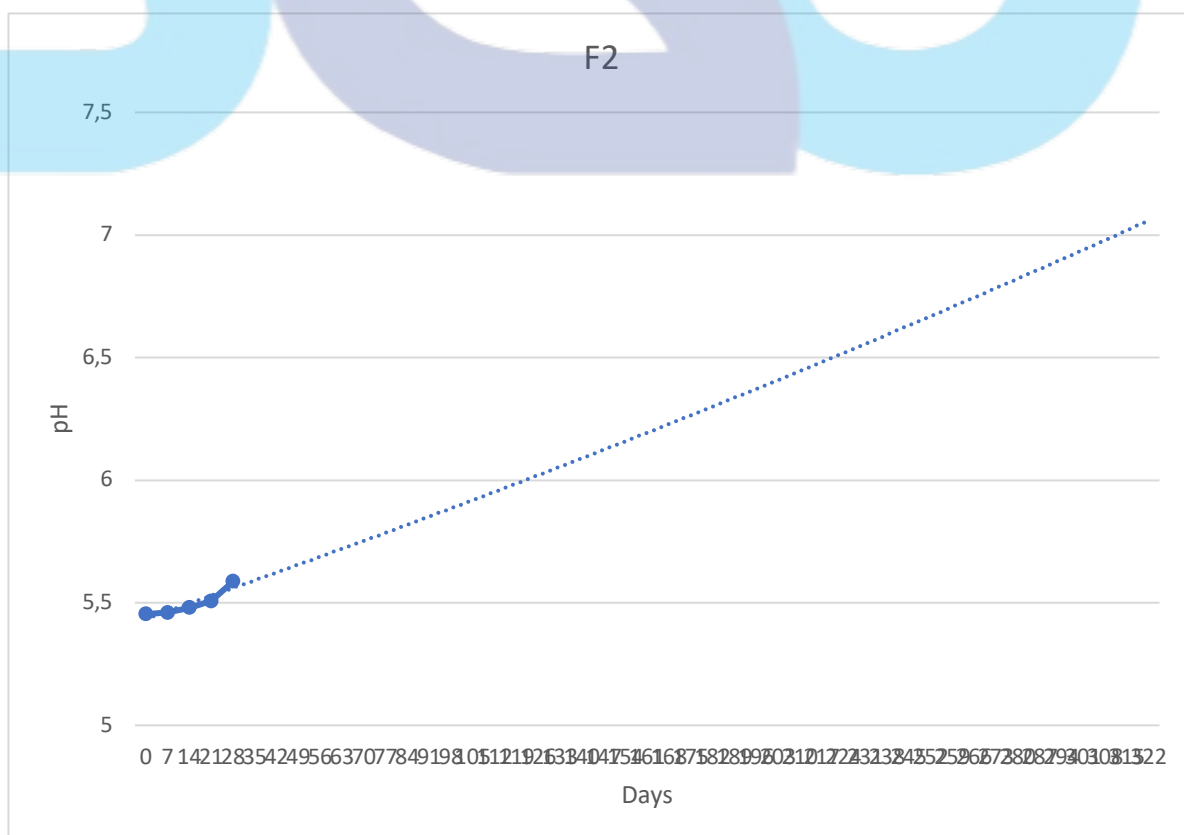|	0th Order		1st Order	
n	5	5	5	5
R^2	0,92	0,85	0,92	0,85
Slope	0,02	0,01	0,00	0,00
k	0,02	0,01	0,00	0,00
intercept	5,17	5,21	1,64	1,65
Sy.x	0,07	0,04	0,01	0,01
sx	11,07	11,07	11,07	11,07
Sb	0,00	0,00	0,00	0,00
Sb1.b2	0,00		0,00	
t	2,88		2,87	
df	6		6	
alpha	0,05		0,05	
pvalue	0,0281901		0,03	

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Appendix 11 Trendline Extrapolating for pH measurement
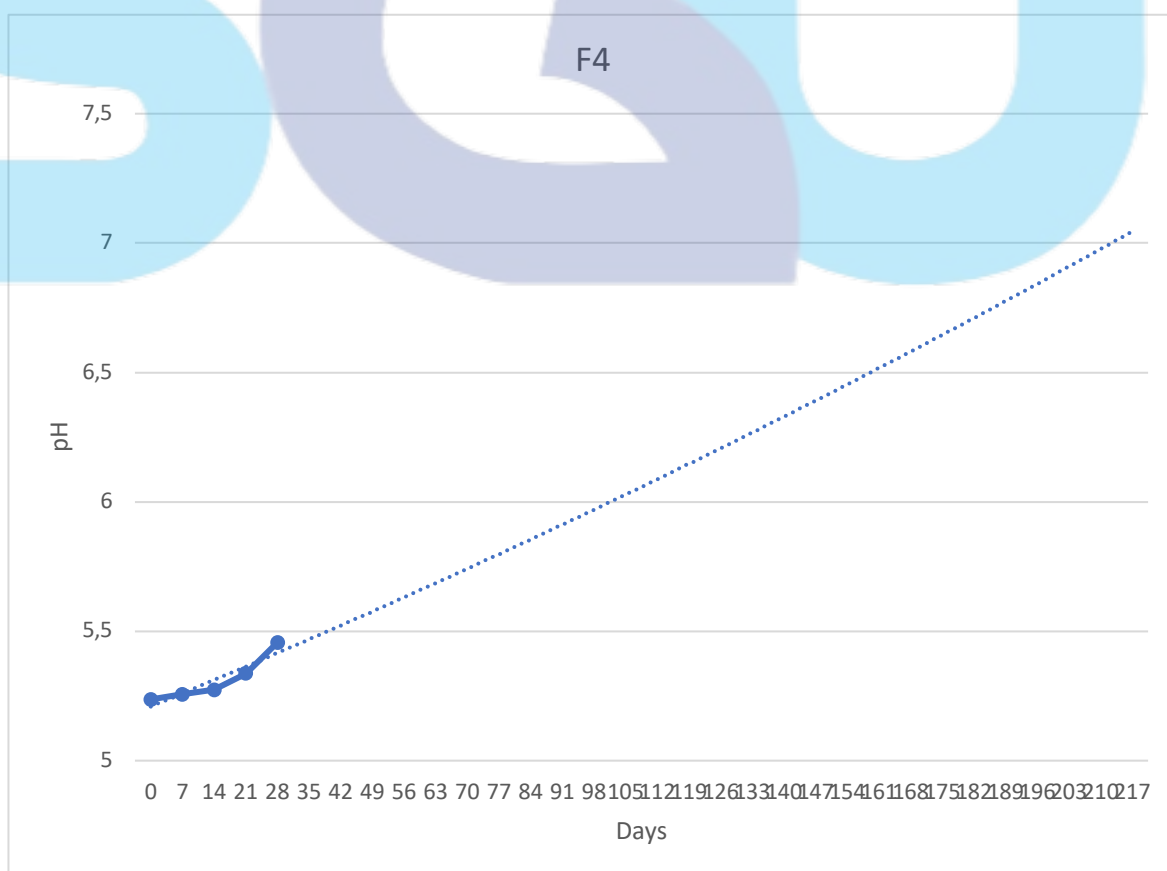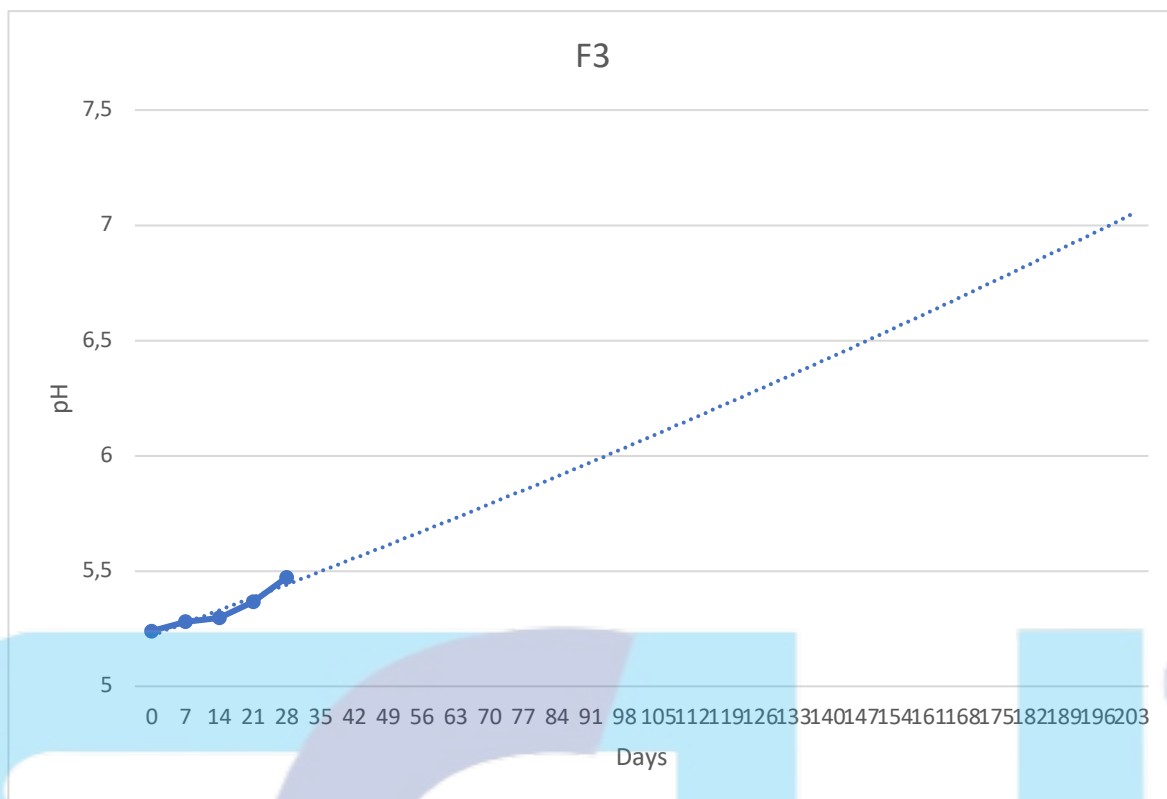
30°C

F1

F2

F3

F4

40°C

F3

F4
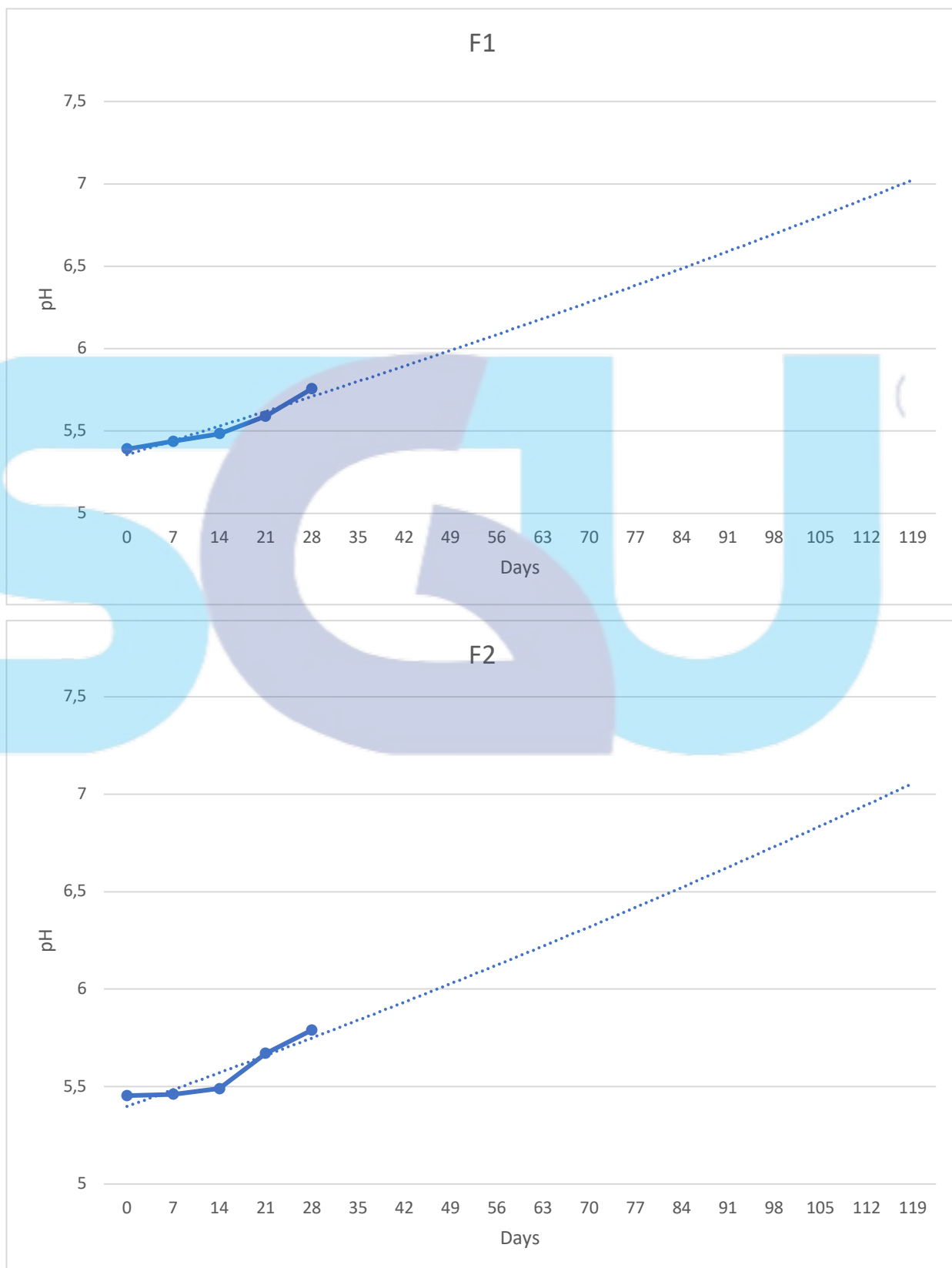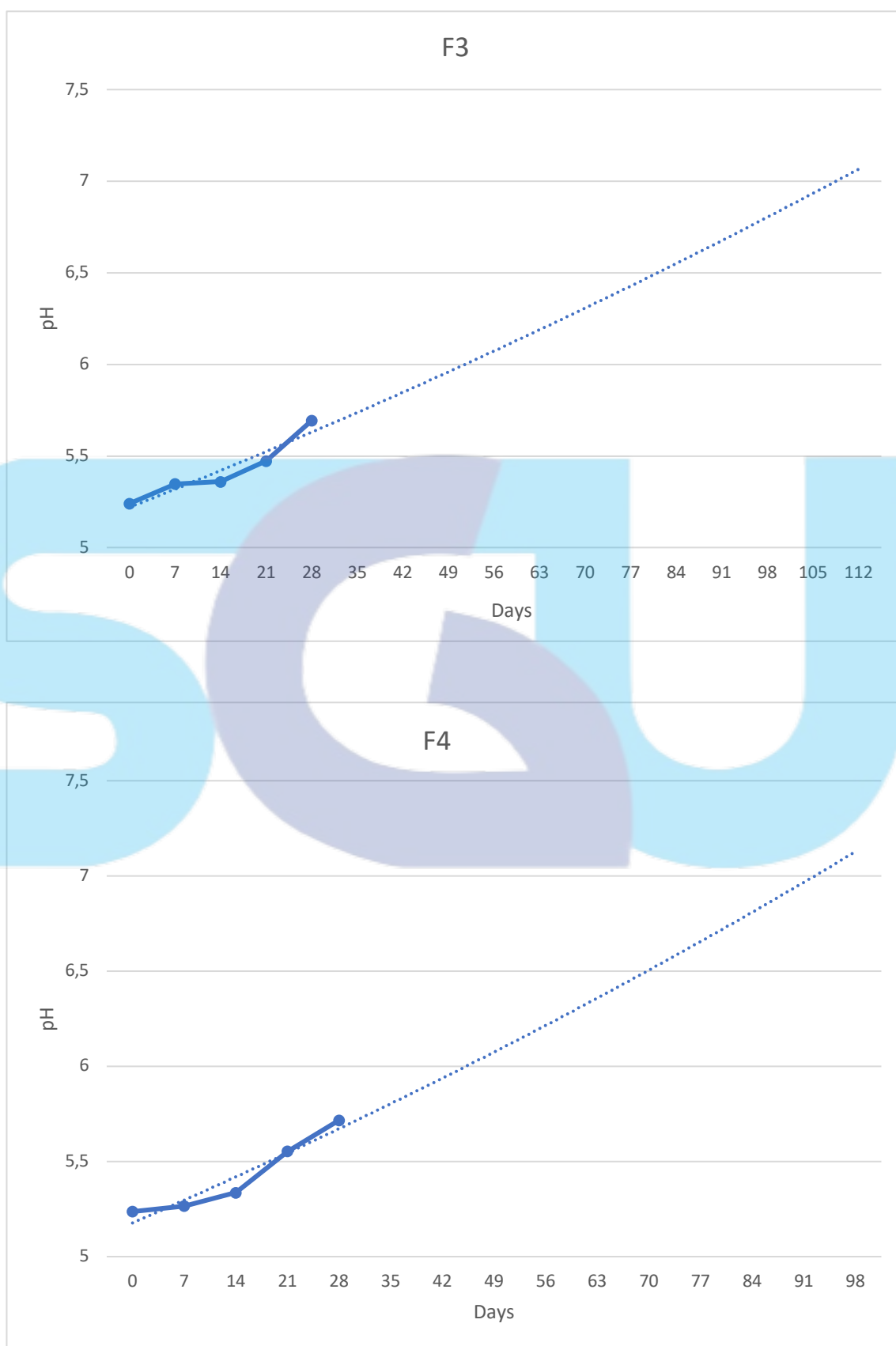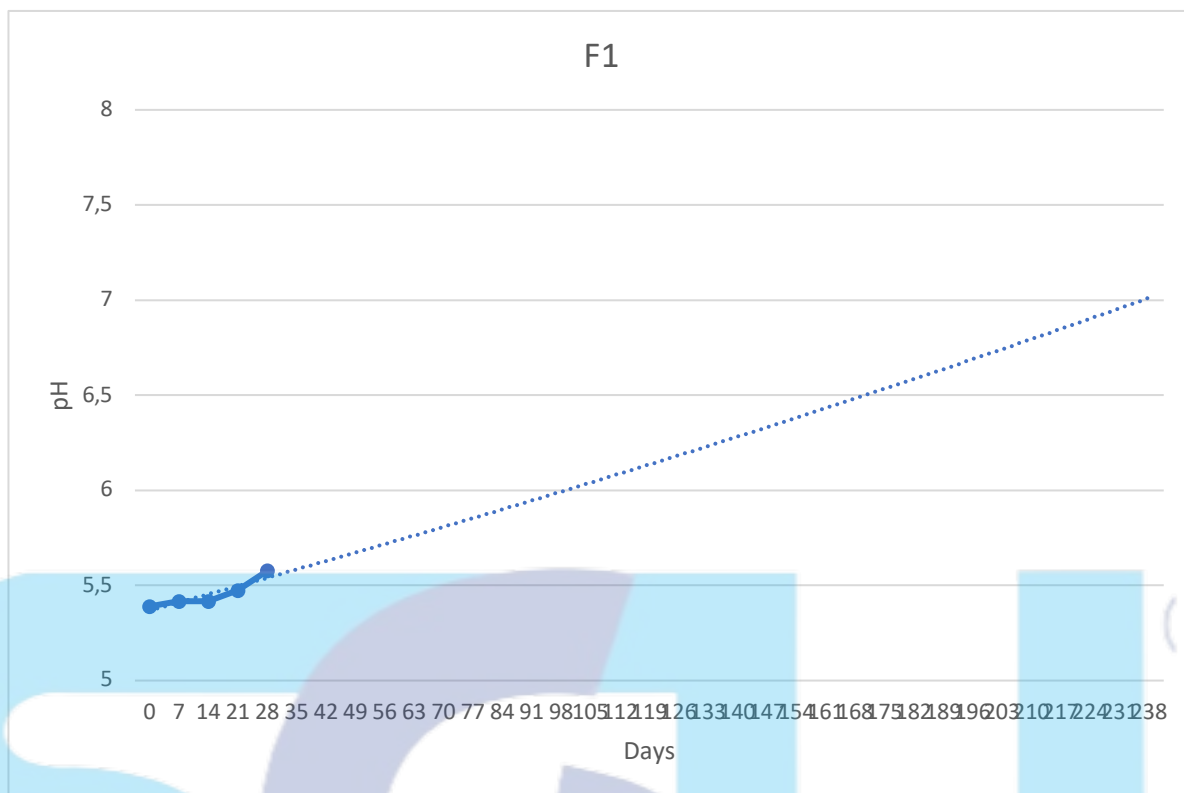
Appendix 12 Statistical Analysis Regression Test for Lightness measurement

Ratio 1:1:1 with 8% Sweetness at 30°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,96601456
R Square	0,93318412
Adjusted R S	0,91091216
Standard Err	0,2724396
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	3,10992111	3,10992111	41,8995075	0,0074825
Residual	3	0,22267	0,07422333		
Total	4	3,33259111			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	76,65	0,2110308	363,217117	4,6021E-08	75,9784058	77,3215942	75,9784058	77,3215942
day	0,07966667	0,01230757	6,47298289	0,0074825	0,0404985	0,11883484	0,0404985	0,11883484

Ratio 1:1:1 with 10% Sweetness at 30°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,99390567
R Square	0,98784848
Adjusted R S	0,98379797
Standard Err	0,09638657
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	2,26576	2,26576	243,882634	0,00057059
Residual	3	0,02787111	0,00929037		
Total	4	2,29363111			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	76,7973333	0,07466071	1028,61772	2,0263E-09	76,5597296	77,034937	76,5597296	77,034937
day	0,068	0,0043543	15,6167421	0,00057059	0,05414267	0,08185733	0,05414267	0,08185733

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Ratio 5:1:1 with 8% Sweetness at 30°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9624855
R Square	0,92637834
Adjusted R S	0,90183779
Standard Err	0,26283638
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	2,60780444	2,60780444	37,7488795	0,00867308
Residual	3	0,20724889	0,06908296		
Total	4	2,81505333			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	75,326	0,20359218	369,984732	4,3542E-08	74,6780788	75,9739212	74,6780788	75,9739212
day	0,07295238	0,01187374	6,14401168	0,00867308	0,03516485	0,11073991	0,03516485	0,11073991

Ratio 5:1:1 with 10% Sweetness at 30°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,98220672
R Square	0,96473004
Adjusted R S	0,95297339
Standard Err	0,22074201
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	3,99845444	3,99845444	82,0582307	0,00284155
Residual	3	0,14618111	0,04872704		
Total	4	4,14463556			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	75,0073333	0,17098603	438,675216	2,6124E-08	74,4631795	75,5514872	74,4631795	75,5514872
day	0,09033333	0,00997211	9,05859982	0,00284155	0,05859764	0,12206903	0,05859764	0,12206903

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Ratio 1:1:1 with 8% Sweetness at 40°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,95825821
R Square	0,91825881
Adjusted R S	0,89101174
Standard Err	0,2433105
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	1,99511111	1,99511111	33,7012012	0,01017308
Residual	3	0,1776	0,0592		
Total	4	2,17271111			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	76,7433333	0,1884675	407,196635	3,2662E-08	76,1435456	77,343121	76,1435456	77,343121
day	0,06380952	0,01099165	5,80527357	0,01017308	0,02882919	0,09878985	0,02882919	0,09878985

Ratio 1:1:1 with 10% Sweetness at 40°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,97243733
R Square	0,94563436
Adjusted R S	0,92751248
Standard Err	0,27564537
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	3,96480111	3,96480111	52,1819135	0,00547031
Residual	3	0,22794111	0,07598037		
Total	4	4,19274222			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	76,688	0,21351399	359,170851	4,7594E-08	76,0085032	77,3674968	76,0085032	77,3674968
day	0,08995238	0,01245239	7,22370497	0,00547031	0,05032332	0,12958144	0,05032332	0,12958144

Ratio 5:1:1 with 8% Sweetness at 40°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,98370472
R Square	0,96767497
Adjusted R S	0,95689996
Standard Err	0,21189358
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	4,03225	4,03225	89,8073449	0,00249093
Residual	3	0,13469667	0,04489889		
Total	4	4,16694667			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	74,8553333	0,16413206	456,067712	2,3247E-08	74,3329919	75,3776748	74,3329919	75,3776748
day	0,09071429	0,00957238	9,47667373	0,00249093	0,06025071	0,12117786	0,06025071	0,12117786

Ratio 5:1:1 with 10% Sweetness at 40°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,97349044
R Square	0,94768364
Adjusted R S	0,93024485
Standard Err	0,26753401
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	3,88960111	3,88960111	54,3434342	0,00516063
Residual	3	0,21472333	0,07157444		
Total	4	4,10432444			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	74,9046667	0,20723095	361,455017	4,6698E-08	74,2451653	75,564168	74,2451653	75,564168
day	0,08909524	0,01208595	7,37179993	0,00516063	0,05063234	0,12755814	0,05063234	0,12755814

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Appendix 13 Statistical Analysis Slope Test for Lightness measurement

Ratio 1:1:1 with 8% Sweetness at 30°C and 40°C

Day	30°C	40°C	ln(A)	ln(B)
0	76,36	76,53	4,3355	4,3376
7	77,47	77,52	4,3499	4,3505
14	77,91	77,54	4,3555	4,3508
21	78,41	78,15	4,3620	4,3587
28	78,676667	78,44	4,3653	4,3624

SLOPE ANALYSIS

	0th Order		1st Order	
n	5	5	5	5
R^2	0,93	0,92	0,93	0,92
Slope	0,08	0,06	0,00	0,00
k	0,08	0,06	0,00	0,00
intercept	76,65	76,74	4,34	4,34
Sy.x	0,27	0,24	0,00	0,00
sx	11,07	11,07	11,07	11,07
Sb	0,01	0,01	0,00	0,00
Sb1.b2	0,02		0,00	
t	0,96		0,94	
df	6		6	
alpha	0,05		0,05	
pvalue	0,3736801		0,38	

Ratio 1:1:1 with 10% Sweetness at 30°C and 40°C

Day	30°C	40°C	ln(A)	ln(B)
0	76,74	76,66	4,3404	4,3394
7	77,26	77,50	4,3472	4,3503
14	77,89	77,60	4,3553	4,3515
21	78,23	78,83	4,3597	4,3673
28	78,63	79,14	4,3648	4,3713

SLOPE ANALYSIS

	0th Order		1st Order	
n	5	5	5	5
R^2	0,99	0,95	0,99	0,95
Slope	0,07	0,09	0,00	0,00
k	0,07	0,09	0,00	0,00
intercept	76,80	76,69	4,34	4,34
Sy.x	0,10	0,28	0,00	0,00
sx	11,07	11,07	11,07	11,07
Sb	0,00	0,01	0,00	0,00
Sb1.b2	0,01		0,00	
t	-1,66		-1,64	
df	6		6	
alpha	0,05		0,05	
pvalue	0,1471490		0,15	

Ratio 5:1:1 with 8% Sweetness at 30°C and 40°C

Day	30°C	40°C	ln(A)	ln(B)
0	75,53	74,85	4,3246	4,3154
7	75,80	75,66	4,3281	4,3262
14	76,05	75,83	4,3314	4,3285
21	76,74	76,89	4,3404	4,3424
28	77,616667	77,40	4,3518	4,3490

SLOPE ANALYSIS

	0th Order		1st Order	
n	5	5	5	5
R^2	0,93	0,97	0,93	0,97
Slope	0,07	0,09	0,00	0,00
k	0,07	0,09	0,00	0,00
intercept	75,33	74,86	4,32	4,32
Sy.x	0,26	0,21	0,00	0,00
sx	11,07	11,07	11,07	11,07
Sb	0,01	0,01	0,00	0,00
Sb1.b2	0,02		0,00	
t	-1,16		-1,20	
df	6		6	
alpha	0,05		0,05	
pvalue	0,2883942		0,27	

Ratio 5:1:1 with 10% Sweetness at 30°C and 40°C

Day	30°C	40°C	ln(A)	ln(B)
0	74,85	74,74	4,3155	4,3140
7	75,90	75,85	4,3294	4,3288
14	76,12	75,93	4,3323	4,3298
21	77,05	76,93	4,3445	4,3429
28	77,44	77,31	4,3495	4,3479

SLOPE ANALYSIS

	0th Order		1st Order	
n	5	5	5	5
R^2	0,96	0,95	0,96	0,95
Slope	0,09	0,09	0,00	0,00
k	0,09	0,09	0,00	0,00
intercept	75,01	74,90	4,32	4,32
Sy.x	0,22	0,27	0,00	0,00
sx	11,07	11,07	11,07	11,07
Sb	0,01	0,01	0,00	0,00
Sb1.b2	0,02		0,00	
t	0,08		0,07	
df	6		6	
alpha	0,05		0,05	
pvalue	0,9395891		0,95	

Appendix 14 Statistical Analysis Regression Test for Viscosity

Ratio 1:1:1 with 8% Sweetness at 30°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,99657079
R Square	0,99315334
Adjusted R S	0,99087112
Standard Err	0,41771457
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	75,930852	75,930852	435,17007	0,00024094
Residual	3	0,5234564	0,17448547		
Total	4	76,4543083			

	Coefficients	Standard Erroi	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	24331,6	0,32356032	75199,5801	5,1859E-15	24330,5703	24332,6297	24330,5703	24332,6297
day	-0,3936508	0,01887042	-20,86073	0,00024094	-0,4537049	-0,3335967	-0,4537049	-0,3335967

Ratio 1:1:1 with 10% Sweetness at 30°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,99388373
R Square	0,98780488
Adjusted R S	0,98373984
Standard Err	0,60858062
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	90	90	243	0,00057367
Residual	3	1,11111111	0,37037037		
Total	4	91,1111111			

	Coefficients	Standard Erroi	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	29483	0,47140452	62542,8877	9,0144E-15	29481,4998	29484,5002	29481,4998	29484,5002
day	-0,4285714	0,02749287	-15,588457	0,00057367	-0,516066	-0,3410768	-0,516066	-0,3410768

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Ratio 5:1:1 with 8% Sweetness at 30°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,98231439
R Square	0,96494157
Adjusted R S	0,95325543
Standard Err	0,78881064
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	51,3777778	51,3777778	82,5714286	0,00281584
Residual	3	1,86666667	0,62222222		
Total	4	53,2444444			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	20000,7333	0,61101009	32733,8837	6,2875E-14	19998,7888	20002,6778	19998,7888	20002,6778
day	-0,3238095	0,03563483	-9,0868822	0,00281584	-0,4372155	-0,2104036	-0,4372155	-0,2104036

Ratio 5:1:1 with 10% Sweetness at 30°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,96830696
R Square	0,93761837
Adjusted R S	0,91682449
Standard Err	1,39708692
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	88,0111111	88,0111111	45,0910816	0,00674069
Residual	3	5,85555556	1,95185185		
Total	4	93,8666667			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	25533	1,08217887	23594,0662	1,679E-13	25529,556	25536,444	25529,556	25536,444
day	-0,4238095	0,06311395	-6,7149893	0,00674069	-0,6246663	-0,2229528	-0,6246663	-0,2229528

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Ratio 1:1:1 with 8% Sweetness at 40°C

SUMMARY OUTPUT

Regression Statistics

Multiple R	0,99539482
R Square	0,99081085
Adjusted R S	0,98774779
Standard Err	2,70185122
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	2361,34444	2361,34444	323,471842	0,00037489
Residual	3	21,9	7,3		
Total	4	2383,24444			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	24329,5333	2,09284495	11625,1007	1,4037E-12	24322,873	24336,1937	24322,873	24336,1937
day	-2,1952381	0,1220572	-17,985323	0,00037489	-2,5836786	-1,8067976	-2,5836786	-1,8067976

Ratio 1:1:1 with 10% Sweetness at 40°C

SUMMARY OUTPUT

Regression Statistics

Multiple R	0,97949867
R Square	0,95941764
Adjusted R S	0,94589018
Standard Err	4,19302772
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	1246,94444	1246,94444	70,9237413	0,00351291
Residual	3	52,7444444	17,5814815		
Total	4	1299,68889			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	29584,5333	3,24790531	9108,80415	2,918E-12	29574,197	29594,8696	29574,197	29594,8696
day	-1,5952381	0,18942168	-8,4216234	0,00351291	-2,1980624	-0,9924138	-2,1980624	-0,9924138

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Ratio 5:1:1 with 8% Sweetness at 40°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,98483512
R Square	0,96990021
Adjusted R S	0,95986695
Standard Err	4,9531135
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	2371,6	2371,6	96,6684783	0,00223667
Residual	3	73,6	24,5333333		
Total	4	2445,2			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	20417,5333	3,83666522	5321,6875	1,4633E-11	20405,3234	20429,7433	20405,3234	20429,7433
day	-2,2	0,22375886	-9,8320129	0,00223667	-2,9121006	-1,4878994	-2,9121006	-1,4878994

Ratio 5:1:1 with 10% Sweetness at 40°C

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,98350178
R Square	0,96727575
Adjusted R S	0,95636766
Standard Err	5,82078014
Observations	5

ANOVA

	df	SS	MS	F	Significance F
Regression	1	3004,44444	3004,44444	88,6751202	0,00253753
Residual	3	101,644444	33,8814815		
Total	4	3106,08889			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	25419,4	4,50875691	5637,78454	1,2307E-11	25405,0511	25433,7489	25405,0511	25433,7489
day	-2,4761905	0,26295604	-9,4167468	0,00253753	-3,313034	-1,639347	-3,313034	-1,639347

Appendix 15 Statistical Analysis Slope Test for Viscosity

Ratio 1:1:1 with 8% Sweetness at 30°C and 40°C

Day	30°C	40°C	ln(A)	ln(B)
0	24331,78	24331,33	10,0995	10,0995
7	24328,33	24310,33	10,0994	10,0987
14	24326,33	24300,67	10,0993	10,0983
21	24323,67	24284,00	10,0992	10,0976
28	24320,333	24267,67	10,0991	10,0969

SLOPE ANALYSIS

	0th Order		1st Order	
n	5	5	5	5
R^2	0,99	0,99	0,99	0,99
Slope	-0,39	-2,20	0,00	0,00
k	0,39	2,20	0,00	0,00
intercept	24331,60	24329,53	10,10	10,10
Sy.x	0,42	2,70	0,00	0,00
sx	11,07	11,07	11,07	11,07
Sb	0,02	0,12	0,00	0,00
Sb1.b2	0,12		0,00	
t	14,59		14,61	
df	6		6	
alpha	0,05		0,05	
pvalue	0,0000065		0,00	

Ratio 1:1:1 with 10% Sweetness at 30°C and 40°C

Day	30°C	40°C	ln(A)	ln(B)
0	29483,67	29581,67	10,2916	10,2949
7	29479,33	29573,33	10,2914	10,2946
14	29476,67	29568,33	10,2914	10,2945
21	29474,00	29550,33	10,2913	10,2939
28	29471,333	29537,33	10,2912	10,2934

SLOPE ANALYSIS

	0th Order		1st Order	
n	5	5	5	5
R^2	0,99	0,96	0,99	0,96
Slope	-0,43	-1,60	0,00	0,00
k	0,43	1,60	0,00	0,00
intercept	29483,00	29584,53	10,29	10,30
Sy.x	0,61	4,19	0,00	0,00
sx	11,07	11,07	11,07	11,07
Sb	0,03	0,19	0,00	0,00
Sb1.b2	0,19		0,00	
t	6,10		6,08	
df	6		6	
alpha	0,05		0,05	
pvalue	0,0008879		0,00	

Ratio 5:1:1 with 8% Sweetness at 30°C and 40°C

Day	30°C	40°C	ln(A)	ln(B)
0	20000,00	20414,00	9,9035	9,9240
7	19999,33	20402,33	9,9035	9,9234
14	19996,67	20392,00	9,9033	9,9229
21	19993,33	20374,33	9,9032	9,9220
28	19991,667	20351,00	9,9031	9,9209

SLOPE ANALYSIS

	0th Order		1st Order	
n	5	5	5	5
R^2	0,96	0,97	0,96	0,97
Slope	-0,32	-2,20	0,00	0,00
k	0,32	2,20	0,00	0,00
intercept	20000,73	20417,53	9,90	9,92
Sy.x	0,79	4,95	0,00	0,00
sx	11,07	11,07	11,07	11,07
Sb	0,04	0,22	0,00	0,00
Sb1.b2	0,23		0,00	
t	8,28		8,23	
df	6		6	
alpha	0,05		0,05	
pvalue	0,0001680		0,00	

Ratio 5:1:1 with 10% Sweetness at 30°C and 40°C

Day	30°C	40°C	ln(A)	ln(B)
0	25533,67	25415,67	10,1478	10,1431
7	25528,33	25402,33	10,1475	10,1426
14	25527,67	25393,33	10,1475	10,1422
21	25525,33	25364,33	10,1474	10,1411
28	25520,333	25348,00	10,1472	10,1405

SLOPE ANALYSIS

	0th Order		1st Order	
n	5	5	5	5
R^2	0,94	0,97	0,94	0,97
Slope	-0,42	-2,48	0,00	0,00
k	0,42	2,48	0,00	0,00
intercept	25533,00	25419,40	10,15	10,14
Sy.x	1,40	5,82	0,00	0,00
sx	11,07	11,07	11,07	11,07
Sb	0,06	0,26	0,00	0,00
Sb1.b2	0,27		0,00	
t	7,59		7,59	
df	6		6	
alpha	0,05		0,05	
pvalue	0,0002722		0,00	

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Appendix 16 Microbial Analysis Candlenut Oil Syrup Emulsion Day 1

No	Sample	Repetition	Dilutions						Number of Colonies (CFU/mL)	
			10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	ISO	BAM
1	1:1:1 with 8% sweetness at 30°C	1	9	0	3	1	1	1	$<1,0 \times 10^1$	$<2,5 \times 10^1$
		2	2	2	2	2	0	1		
2	1:1:1 with 10% sweetness at 30°C	1	1	4	0	1	1	1	$<1,0 \times 10^1$	$<2,5 \times 10^1$
		2	4	0	0	1	5	0		
3	5:1:1 with 8% sweetness at 30°C	1	8	3	0	0	3	0	$<1,0 \times 10^1$	$<2,5 \times 10^1$
		2	4	5	0	1	0	0		
4	5:1:1 with 10% sweetness at 30°C	1	8	0	3	0	1	1	$<1,0 \times 10^1$	$<2,5 \times 10^1$
		2	2	1	0	0	1	0		
5	1:1:1 with 8% sweetness at 40°C	1	4	1	0	1	0	3	$<1,0 \times 10^1$	$<2,5 \times 10^1$
		2	7	3	1	0	3	0		
6	1:1:1 with 10% sweetness at 40°C	1	11	7	3	0	1	0	$<1,0 \times 10^1$	$<2,5 \times 10^1$
		2	9	4	0	1	0	0		
7	5:1:1 with 8% sweetness at 40°C	1	6	3	1	0	1	0	$<1,0 \times 10^1$	$<2,5 \times 10^1$
		2	3	0	1	1	0	0		
8	5:1:1 with 10% sweetness at 40°C	1	6	0	0	3	1	1	$<1,0 \times 10^1$	$<2,5 \times 10^1$
		2	0	5	0	1	7	0		

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Appendix 17 Microbial Analysis Candlenut Oil Syrup Emulsion Day 28

No	Sample	Repetition	Dilutions						Number of Colonies (CFU/mL)	
			10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	ISO	BAM
1	1:1:1 with 8% sweetness at 30°C	1	54	25	10	4	4	0	$8,19 \times 10^2$	$8,19 \times 10^2$
		2	61	40	4	1	0	0		
2	1:1:1 with 10% sweetness at 30°C	1	57	31	2	3	0	1	$8,32 \times 10^2$	$8,32 \times 10^2$
		2	70	25	1	5	1	0		
3	5:1:1 with 8% sweetness at 30°C	1	54	32	5	1	1	0	$8,41 \times 10^2$	$8,41 \times 10^2$
		2	64	35	7	1	1	0		
4	5:1:1 with 10% sweetness at 30°C	1	70	28	5	0	1	2	$8,91 \times 10^2$	$8,91 \times 10^2$
		2	61	37	1	3	1	0		
5	1:1:1 with 8% sweetness at 40°C	1	30	26	0	1	0	0	$6,09 \times 10^2$	$6,09 \times 10^2$
		2	47	31	4	5	0	0		
6	1:1:1 with 10% sweetness at 40°C	1	33	31	3	1	2	0	$5,36 \times 10^2$	$5,36 \times 10^2$
		2	29	25	3	1	0	1		
7	5:1:1 with 8% sweetness at 40°C	1	45	37	4	0	1	0	$6,86 \times 10^2$	$6,86 \times 10^2$
		2	34	35	1	3	0	0		
8	5:1:1 with 10% sweetness at 40°C	1	26	32	0	5	1	1	$6,23 \times 10^2$	$6,23 \times 10^2$
		2	38	41	1	4	0	0		

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Appendix 18 Consent Form for Parent of the panelists in Sensory Analysis

SURAT PERSETUJUAN ORANG TUA

Saya yang bertanda tangan di bawah ini :

    Nama   :

    Tempat, Tanggal Lahir   :

Selaku orang tua/ wali dari anak saya :

    Nama   :

    Tempat, Tanggal Lahir   :

    Jenis Kelamin   :

Dengan ini **memberikan izin** kepada anak saya untuk mengikuti sensory test berupa produk supplement syrup bertujuan untuk keperluan data dalam thesis bernama LOUISA AILEEN dengan judul "Development and Formulation Of Omega- 3 Nano- Emulsion Syrup From Candlenut Oil"

Semua bahan yang diformulasikan di produk ini aman dan menggunakan produk "food grade" dan telah dilakukan diuji test microba

Demikian surat izin ini saya buat dengan sebenar- benarnya untuk digunakan seperlunya.

Jakarta, 8 Juni 2023

Louisa Aileen

LAMPIRAN

Tujuan Penelitian : sesi panel ini dilakukan untuk mengevaluasi rasa produk supplement sirup minyak kemiri menggunakan analisis deskriptif sensori.

Prosedur :

1. Panelis akan duduk berhadapan dengan panel leader di ruangan yang tidak bising dan intensitas cahaya yang cukup

2. Kehadapan panelis disajikan dua produk supplement syrup yang berisi minyak kemiri.

3. Tugas Panelis adalah menyicipi kedua supplement minyak kemiri syrup, dan akan diwawancarai dan menilai sifat sensorik (warna, bau, rasa dan manis) dari kedua produk tersebut.

4. Formulir pertanyaan yang digunakan sebagai berikut :

5. Panelis akan mendapatkan hadiah yang menarik.

PERHATIAN: Jika anak anda terdapat alergi pada kemiri dan juga protein, mohon tidak ikut serta dalam sensori ini.

Appendix 19 Questioner for the panelists in Sensory Analysis

SENSORY TEST

NAMA :　　　　　　**UMUR:**

SAMPLE A

warna					
bau					
rasa					
manis					

SAMPLE B

warna					
bau					
rasa					
manis					

Jadi lebih suka sample yang mana?

Appendix 20 Data Hedonic Acceptance Sensory Test

Sample A

Scale Category	Colour	Aroma	Taste	Sweetness
Extreme Dislike	0	0	0	0
Dislike moderately	0	0	0	0
Neither like nor dislike	10	6	2	0
Like moderately	7	13	14	14
Extremely like	24	22	25	27

Sample B

Scale Category	Colour	Aroma	Taste	Sweetness
Extreme Dislike	0	0	0	0
Dislike moderately	1	0	0	0
Neither like nor dislike	10	7	4	8
Like moderately	10	15	23	19
Extremely like	21	19	14	14

Appendix 21 Statistical Analysis (Wilcoxon Test) for Hedonic Test

<u>Colour</u>

Sample A vs Sample B

Wilcoxon Signed Rank Test Result

Significance Level, α :	0,05

Sample Size, N :	41
Effective Sample Size :	5
W	11
Wcritical	15 One Tail
Standard Deviation	7,42
Test Statistic, Z :	1,4158
p -Value (lower tail)	0,9216
p -Value (upper tail)	0,0784
p -Value (two tail)	0,1568

Conclusion

NO SIGNIFICANT DIFFERENT

NOTE: For N < 10 use tabled values for Wilcoxon Test

<u>Aroma</u>

Sample A vs Sample B

Wilcoxon Signed Rank Test Result

Significance Level, α :	0,05

Sample Size, N :	41
Effective Sample Size :	7
W	14
Wcritical	22 One Tail
Standard Deviation	11,83
Test Statistic, Z :	1,1410
p -Value (lower tail)	0,8731
p -Value (upper tail)	0,1269
p -Value (two tail)	0,2539

Conclusion

NO SIGNIFICANT DIFFERENT

NOTE: For N < 10 use tabled values for Wilcoxon Test

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Taste

Sample A vs Sample B

Wilcoxon Signed Rank Test Result

Significance Level, α :	0,05

Sample Size, N :	41
Effective Sample Size :	13
W	91
Wcritical	
Standard Deviation	28,62
Test Statistic, Z :	3,1623
p -Value (lower tail)	0,9992
p -Value (upper tail)	0,0008
p -Value (two tail)	0,0016

Conclusion

SIGNIFICANT DIFFERENT

NOTE: For N < 10 use tabled values for Wilcoxon Test

Sweetness

Sample A vs Sample B

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Wilcoxon Signed Rank Test Result

Significance Level, α : | 0,05

Sample Size, N :	41
Effective Sample Size :	36
W	346
Wcritical	
Standard Deviation	127,30
Test Statistic, Z :	2,7140
p-Value (lower tail)	0,9967
p-Value (upper tail)	0,0033
p-Value (two tail)	0,0066

Conclusion

SIGNIFICANT DIFFERENT

NOTE: For N < 10 use tabled values for Wilcoxon Test

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Appendix 22 Omega Content Candlenut Oil Syrup Emulsion

SIG | **SARASWANTI** (A MEMBER OF)

28.1/F-PP Revisi 4

No	Parameter	Unit	Simplo	Duplo	Limit Of Detection	Method
1	Omega 3 Fatty Acids	mg / 100 g	3916.5	4055.1	-	18-6-1/MU/SMM-SIG (GC-FID)
2	Omega 6 Fatty Acids	mg / 100 g	6862.3	7085.1	-	18-6-1/MU/SMM-SIG (GC-FID)
3	Omega 9 Fatty Acids	mg / 100 g	5338.2	5548.0	-	18-6-1/MU/SMM-SIG (GC-FID)

Bogor,June 14, 2023
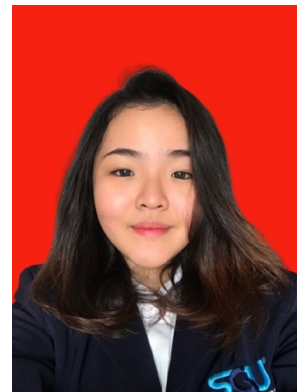PT. Saraswanti Indo Genetech

Dwi Yulianto Laksono, S.Si
General Laboratory Manager

Louisa Aileen

CURRICULUM VITAE

PERSONAL INFORMATION

Name   : Louisa Aileen

Place & date of birth : Jakarta, 26 January 2003

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      Barat, 11640

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Email   : louisaileen2601@gmail.com

Linkedin   : Louisa Aileen

EDUCTION

2019 – 2023	Swiss German University, Department of Pharmaceutical Chemical Engineering
2016 – 2019	Notre Dame Senior High School
2014 – 2016	Bukit Sion Junior High School

WORKING EXPERIENCE

PT PHAROS INDONESIA

Intern – Cosmetic Research and Development

June 2021 – August 2021

1. Develop new cosmetic products formula (concealer anti-acne)
2. Carry out research, monitoring, evaluation, and reporting of research.
3. Ensure the quality performance of the product within the company in accordance with the standards that have been set
4. Take data and record the materials of the products that come to the laboratory.

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	TJONG YOEN FOE (TOKO OBAT BERIZIN MERLIN)
	Intern – Quality Control Department
February 2022 – July 2022	1. Analysis and monitoring Chinese Medicine Report.
	2. Validating all the condition packaging exported Chinese medicine.
	3. Checking the quality of the sample in each batch shipment of Chinese medicine.

ORGANIZATIONS AND EXPERIENCE

December 2021 – March 2022	Committee Public Relation at Indonesia Fun Science Award 4.0 held by Swiss German University
June 2021	Secretary of LST Charity
February 2021	Chairman of the event at Virtua Innovation Chemical Event
2020 – 2021	President at Association of Chemical Engineering Students
December 2020 – March 2021	Committee of Event at Indonesia Fun Science Award 3.0 held by Swiss German University
October 2019	Committee of Research at Community Services to SDN Pakualam 2

Language Skills

Indonesian	: Mother Tongue
English	: Good Spoken and written
German	: Basic

Computer Skills

| Microsoft office (Word, PowerPoint, excel) | : Excellent |
| Adobe Photoshop | : Good |

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