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APPENDICES

APPENDIX A. RESULTS OF PRELIMINARY STUDY ON T4 TREATMENT GROUPS

Table A1. *Comparison of the oil yield between T1, T2, and T4 treatment groups*

Treatment Group	Oil Yield (%)		
	Batch 1	Batch 2	Batch 3
Control	32.70	33.10	25.40
T1	31.44	29.58	28.78
T2	32.51	25.11	34.34
T4	15.32	16.09	16.11

Table A2. *Comparison of the pH value of T4 samples before and after thawing*

Batch No	Replication No	pH before*	pH after**
1	1	6.34	4.42
	2	6.29	4.41
	3	6.33	4.43
2	1	6.35	4.42
	2	6.35	4.36
	3	6.35	4.41
3	1	6.35	4.39
	2	6.36	4.40
	3	6.35	4.41

Note. *pH measurement was taken of the coconut milk; **pH measurement was taken of the cream
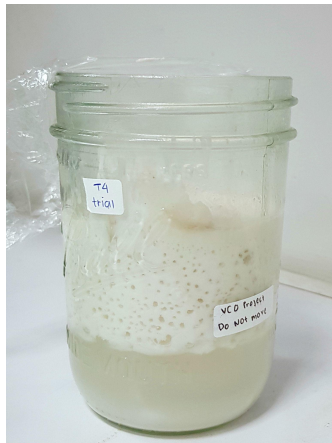
Figure A1. *T4 trial sample showing phase separation and presence of air bubbles in the cream after 16-h of thawing.*

Figure A2. *Three biological replicates of T4 samples showing phase separation and air cells in the cream after 16-h thawing period. These samples were prepared to obtain supporting data on their pH changes before and after thawing*

APPENDIX B. CENTRIFUGATION PARAMETERS ADJUSTMENTS CALCULATION

1. Pre-treatment centrifugation

Parameters described by Mansor et al. (2012): **3600g for 10 minutes**

The unit 'g', also referred to as 'Relative centrifugal force (RCF)', was converted to 'rpm' using the following equation:

$$RCF = 1.118 \times 10^{-5} \times r \times (RPM)^2$$

Where;

r = radius of the rotor (cm)

RCF = relative centrifugal force (g)

RPM = rotation speed/rotations per minute

Calculation

Known variables:

r = 15 cm

RCF = 3600

$RCF = 1.118 \times 10^{-5} \times r \times (RPM)^2$

$3600 = 1.118 \times 10^{-5} \times 15 \times (RPM)^2$

$3600 = 1.677 \times 10^{-4} \times (RPM)^2$

$3600/(1.677 \times 10^{-4}) = RPM^2$

$21466906.19 = RPM^2$

$RPM = \sqrt{21466906.19}$

RPM ≃ **4633.24**

Since the maximum speed of the centrifuge machine is 4000 rpm, the duration had to be adjusted to achieve the same amount of rotation.

4633.24 rpm × 10 minutes = 4000 rpm × t

46332.4 = 4000 t

t = 11.5831 ≃ **12 minutes at 4000 rpm**, since the machine does not have decimal settings.

2. Final centrifugation

Parameters described by Raghavendra & Raghavarao (2010): **4880g for 15 minutes**

Calculation

The calculation shown in Number 1 was repeated using the following variables:

r = 15 cm

RCF = 4880g

t = 15 minutes

RCF = $1.118 \times 10^{-5} \times r \times (RPM)^2$

$4880 = 1.118 \times 10^{-5} \times 15 \times (RPM)^2$

$4880 = 1.677 \times 10^{-4} \times (RPM)^2$

$4880/(1.677 \times 10^{-4}) = RPM^2$

$29099582.59 = RPM^2$

$RPM = \sqrt{29099582.59}$

$RPM \approx 5394.4$

Duration calculation

5394.4 rpm $\times$ 15 minutes = 4000 rpm $\times$ t

$80916 = 4000\ t$

t = 20.229 $\simeq$ **20 minutes at 4000 rpm**

APPENDIX C. COMPARISON OF 12-H AND 16-H LONG THAWING PERIOD TO THE INTENSITY OF THE OIL SEPARATION

Figure C1. *Coconut cream after 12 hours of thawing*

Figure C2. *Coconut cream after 16 hours of thawing*

APPENDIX D. COMPARISON BETWEEN ONE ROUND AND TWO ROUNDS OF CENTRIFUGATION TO THE VCO YIELD

Figure D1. *VCO yield comparison between one round (60 minutes) and two rounds of centrifugation (30 minutes each)*

APPENDIX E. RESULTS OF STATISTICAL ANALYSIS USING KRUSKAL-WALLIS NON-PARAMETRIC TEST

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of %MC is the same across categories of Treatment.	Independent-Samples Kruskal-Wallis Test	,650	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is ,05.

Figure E1. *Independent Samples Kruskal-Wallis test result for the distribution of %MC of coconut milk samples*

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of pH is the same across categories of Treatment.	Independent-Samples Kruskal-Wallis Test	,110	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is ,05.

Figure E2. *Independent Samples Kruskal-Wallis test result for the distribution of pH values of coconut milk samples*

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of IodineValue is the same across categories of Treatment Category.	Independent-Samples Kruskal-Wallis Test	,001	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is ,05.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
T2-T1	8,444	3,738	2,259	,024	,072
T2-Control	-13,389	3,738	-3,582	,000	,001
T1-Control	-4,944	3,738	-1,323	,186	,558

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is ,05.

Figure E3. *Independent Samples Kruskal-Wallis test result with pairwise comparison for Iodine Value of VCO samples*

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of %FFA is the same across categories of Treatment Category.	Independent-Samples Kruskal-Wallis Test	,000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is ,05.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
T1-T2	-11,889	3,727	-3,190	,001	,004
T1-Control	-14,611	3,727	-3,920	,000	,000
T2-Control	-2,722	3,727	-,730	,465	1,000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is ,05.

Figure E4. *Independent Samples Kruskal-Wallis test result with pairwise comparison for %FFA of VCO samples*

APPENDIX F. SIMILARITY SCORE

Figure F1. *Turnitin similarity result*