

7 APPENDICES

Appendix 1: Fat Content

Product	Repetition	Fat (%)	Average (%)
S0161	1	55.62%	57.83
	2	57.60%	
	3	60.28%	
S0162	1	61.05%	60.64
	2	60.81%	
	3	60.05%	
S0163	1	60.39%	59.75
	2	58.32%	
	3	60.55%	
S0164	1	57.98%	59.75
	2	60.72%	
	3	60.53%	
S0165	1	59.78%	59.64
	2	59.89%	
	2	60.11%	
VB 60S	1	58.55%	59.65
	2	61.38%	
	3	59.02%	

Appendix 2: Ash Content

Product	Repetition	Ash (%)	Average (%)
S0161	1	4,11	4,10
	2	4,11	
	3	4,09	
S0162	1	4,15	4,15
	2	4,18	
	3	4,13	
S0163	1	4,18	4,15
	2	4,14	
	3	4,12	
S0164	1	4,29	4,27
	2	4,22	
	3	4,31	
S0165	1	4,29	4,32
	2	4,42	
	3	4,25	
VB 60S	1	4,79	4,83

2	4,88
3	4,81

Appendix 3: Protein Content

Product	Repetition	Protein (%)	Average (%)
S0161	1	4.52	4.55
	2	4.56	
	3	4.57	
S0162	1	4.40	4.41
	2	4.42	
	3	4.40	
S0163	1	4.10	4.29
	2	4.41	
	3	4.36	
S0164	1	4.42	4.40
	2	4.39	
	3	4.40	
S0165	1	4.04	4.28
	2	4.41	
	3	4.40	
VB 60S	1	4.42	4.40
	2	4.40	
	3	4.38	

Appendix 4: Moisture Content

Product	Repetition	Moisture (%)	Average (%)
S0161	1	0.84	1.28
	2	1.33	
	3	1.67	
S0162	1	0.29	1.00
	2	1.35	
	3	1.37	
S0163	1	0.81	1.15
	2	0.83	
	3	1.83	
S0164	1	0.66	0.86
	2	0.51	
	3	1.42	

S0165	1	1.39	1.17
	2	0.71	
	3	1.42	
VB 60S	1	1.67	1.79
	2	1.47	
	3	2.23	

Appendix 5: Bulk Density

Product	Repetition	Bulk Density (g/L)	Average (g/L)
S0161	1	491.22	487.52
	2	486.00	
	3	485.33	
S0162	1	486.58	485.74
	2	488.51	
	3	482.12	
S0163	1	509.47	509.82
	2	500.69	
	3	519.29	
S0164	1	480.13	477.37
	2	476.97	
	3	475.00	
S0165	1	482.00	480.80
	2	482.12	
	3	478.29	
VB 60S	1	504.17	496.21
	2	492.57	
	3	491.89	

Appendix 6: Table of Normality

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
FAT_CONTENT	.203	18	.047	.898	18	.053

a. Lilliefors Significance Correction

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ASH_CONTENT	.229	18	.013	.834	18	.005

a. Lilliefors Significance Correction

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PROTEIN_CONTENT	.306	18	.000	.750	18	.000

a. Lilliefors Significance Correction

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
MOISTURE_CONTENT	.203	18	.048	.956	18	.524

a. Lilliefors Significance Correction

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
BULK_DENSITY	.179	18	.132	.900	18	.057

a. Lilliefors Significance Correction

Appendix 7: Table of Homogeneity**Test of Homogeneity of Variances**

Fat

Levene Statistic	df1	df2	Sig.
1.690	5	12	.211

Test of Homogeneity of Variances

Ash

Levene Statistic	df1	df2	Sig.
10.575	5	12	.000

Test of Homogeneity of Variances

Protein

Levene Statistic	df1	df2	Sig.
9.567	5	12	.001

Test of Homogeneity of Variances

Moisture

Levene Statistic	df1	df2	Sig.
.586	5	12	.711

Test of Homogeneity of Variances

Bulk_Density

Levene Statistic	df1	df2	Sig.
1.855	5	12	.176

Appendix 8: ONE WAY ANOVA (Parametric)**Descriptives**

FAT

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
MYVEROL 1%	3	57.8333	2.33875	1.35028	52.0236	63.6431	55.62	60.28
MYVEROL 1.25%	3	60.6367	.52205	.30140	59.3398	61.9335	60.05	61.05
DIMODAN 1%	3	59.7533	1.24388	.71815	56.6634	62.8433	58.32	60.55
DIMODAN 1.25%	3	59.7467	1.53324	.88522	55.9379	63.5555	57.98	60.73
VB 60S NETHERLAND	3	59.6433	.62748	.36228	58.0846	61.2021	58.93	60.11
VB 60S SALATIGA	3	59.6500	1.51654	.87558	55.8827	63.4173	58.55	61.38
Total	18	59.5439	1.48218	.34935	58.8068	60.2810	55.62	61.38

ANOVA

FAT

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.679	5	2.536	1.234	.352
Within Groups	24.668	12	2.056		
Total	37.347	17			

Descriptives

MOISTURE

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
					MYVEROL 1%	3		
MYVEROL 1.25%	3	1.0033	.61785	.35671	-.5315	2.5381	.29	1.37
DIMODAN 1%	3	1.1567	.58321	.33672	-.2921	2.6054	.81	1.83
DIMODAN 1.25%	3	.8633	.48789	.28168	-.3486	2.0753	.51	1.42
VB 60S NETHERLAND	3	1.1733	.40154	.23183	.1759	2.1708	.71	1.42
VB 60S SALATIGA	3	1.7900	.39395	.22745	.8114	2.7686	1.47	2.23
Total	18	1.2111	.51025	.12027	.9574	1.4649	.29	2.23

ANOVA

MOISTURE

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.525	5	.305	1.262	.341
Within Groups	2.901	12	.242		
Total	4.426	17			

Descriptives

BULK_D

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
					MYVEROL 1%	3		
MYVEROL 1.25%	3	485.7367	3.27741	1.89222	477.5951	493.8782	482.12	488.51
DIMODAN 1%	3	509.8167	9.30484	5.37215	486.7022	532.9312	500.69	519.29
DIMODAN 1.25%	3	477.3667	2.58790	1.49413	470.9380	483.7954	475.00	480.13
VB 60S NETHERLAND	3	480.8033	2.17744	1.25714	475.3943	486.2124	478.29	482.12
VB 60S SALATIGA	3	496.2100	6.90194	3.98484	479.0646	513.3554	491.89	504.17
Total	18	489.5750	11.95506	2.81784	483.6299	495.5201	475.00	519.29

ANOVA

BULK_D

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2096.110	5	419.222	15.080	.000
Within Groups	333.590	12	27.799		
Total	2429.700	17			

Appendix 9: Kruskal Wallis (Non Parametric)

Ranks			
NDC		N	Mean Rank
Ash	Myverol 1%	3	3.00
	Myverol 1,25%	3	7.83
	Dimodan 1%	3	7.17
	Dimodan 1,25%	3	13.00
	VB 60s Netherland	3	11.00
	VB 60s Salatiga	3	15.00
	Total	18	

Test Statistics ^{a,b}	
	Ash
Chi-Square	10.086
df	5
Asymp. Sig.	.073

a. Kruskal Wallis Test
b. Grouping Variable: NDC

Ranks			
NDC		N	Mean Rank
Protein	Myverol 1%	3	17.00
	Myverol 1,25%	3	10.00
	Dimodan 1%	3	5.50
	Dimodan 1,25%	3	9.00
	VB 60s Netherland	3	6.83
	VB 60s Salatiga	3	8.67
	Total	18	

Test Statistics ^{a,b}	
	Protein
Chi-Square	8.704
df	5
Asymp. Sig.	.121

a. Kruskal Wallis Test
b. Grouping Variable: NDC

Appendix 10: Table of Duncan

Fat		
Duncan ^{a,b}		
NDC	N	Subset
		1
Myverol 1%	3	57.8333
VB 60s Netherland	3	59.6433
VB 60s Salatiga	3	59.6500
Dimodan 1,25%	3	59.7467
Dimodan 1%	3	59.7533
Myverol 1,25%	3	60.6367
Sig.		.051

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 2.056.
a. Uses Harmonic Mean Sample Size = 3.000.
b. Alpha = ,05.

Ash				
Duncan ^{a,b}				
NDC	N	Subset		
		1	2	3
Myverol 1%	3	4.1033		
Dimodan 1%	3	4.1467	4.1467	
Myverol 1,25%	3	4.1533	4.1533	
VB 60s Netherland	3		4.2833	4.2833
Dimodan 1,25%	3			4.3600
VB 60s Salatiga	3			4.4000
Sig.		.537	.107	.163

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = .008.
a. Uses Harmonic Mean Sample Size = 3.000.
b. Alpha = ,05.

Protein			
Duncan ^{a,b}			
NDC	N	Subset	
		1	2
VB 60s Netherland	3	4.2833	
Dimodan 1%	3	4.2900	
VB 60s Salatiga	3	4.4000	4.4000
Dimodan 1,25%	3	4.4033	4.4033
Myverol 1,25%	3	4.4067	4.4067
Myverol 1%	3		4.5500
Sig.		.236	.150

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = .012.

a. Uses Harmonic Mean Sample Size = 3.000.
b. Alpha = .05.

Moisture		
Duncan ^{a,b}		
NDC	N	Subset
		1
Dimodan 1,25%	3	.8633
Myverol 1,25%	3	1.0033
Dimodan 1%	3	1.1567
VB 60s Netherland	3	1.1733
Myverol 1%	3	1.2800
VB 60s Salatiga	3	1.7900
Sig.		.059

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = .242.

a. Uses Harmonic Mean Sample Size = 3.000.
b. Alpha = .05.

Bulk_Density					
Duncan ^{a,b}					
NDC	N	Subset			
		1	2	3	4
Dimodan 1,25%	3	477.3667			
VB 60s Netherland	3	480.8033	480.8033		
Myverol 1,25%	3	485.7367	485.7367		
Myverol 1%	3		487.5167	487.5167	
VB 60s Salatiga	3			496.2100	
Dimodan 1%	3				509.8167
Sig.		.088	.163	.066	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 27.799.
a. Uses Harmonic Mean Sample Size = 3.000.
b. Alpha = ,05.

Appendix 11: Laboratory Activity Documentation



Figure 9. Non-Dairy Creamer Sample



Figure 10. 3in1 Coffee Test



Figure 11. Butyrometer Fat Analysis



Figure 12. Moisture Content

Appendix 12. Plagiarism Check



4.31% PLAGIARISM APPROXIMATELY

0.31% IN QUOTES

Report #10893988

INTRODUCTION Background Research An emulsion is a mixture of two mutually insoluble liquids; one liquid dispersed as droplets in the other liquid. " 0.1 An emulsion is a heterogeneous system, consisting of at least one immiscible liquid intimately dispersed in another in the form of droplets, whose diameter, in general, exceeds 0.1 μm . Such systems possess minimal stability, which may be accentuated by such additives as surface-active agents, finely divided solids." This definition is also stated in the IUPAC-IUB (1972) definition of an emulsion: "in an emulsion, liquid droplets or liquid crystals dispersed in a liquid." Micro- and macromulsions are differentiating them based on size and stability. Macroemulsions are defined as "mixtures of two immiscible liquids, one of them being dispersed in the form of fine droplets with (a) diameter greater than 0.1 μm in the other liquid ADDIN (Usald et al., 2017). Nowadays, palm oil is the most commonly used vegetable oil in the world. Palm oil is produced from the pulp of the fruit of the oil palm (*Elaeis guineensis*). 19 Palm oil and palm kernel oil have the same botanical origin but differ significantly in their fatty acid (FA) composition. According to the United States Department of Agriculture (USDA), in 2017/2018 growth of world palm oil production closed at 7% above the previous year, rising from 65.25 million tons (Mt) in the year 2016/2017 to

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Figure 13. Plagiarism Check