

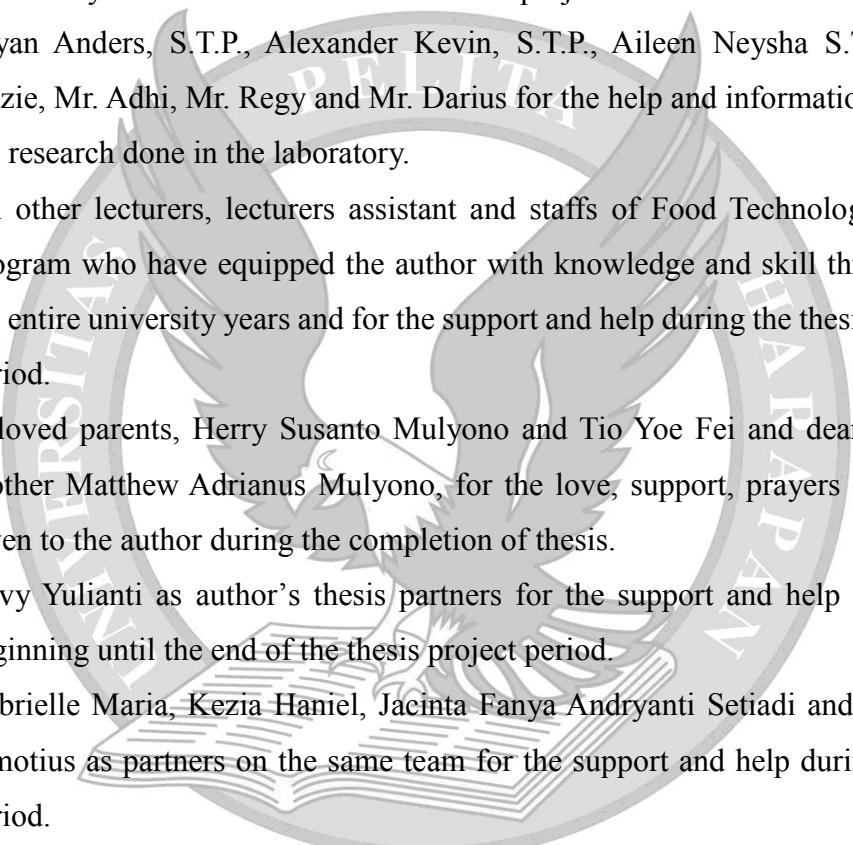
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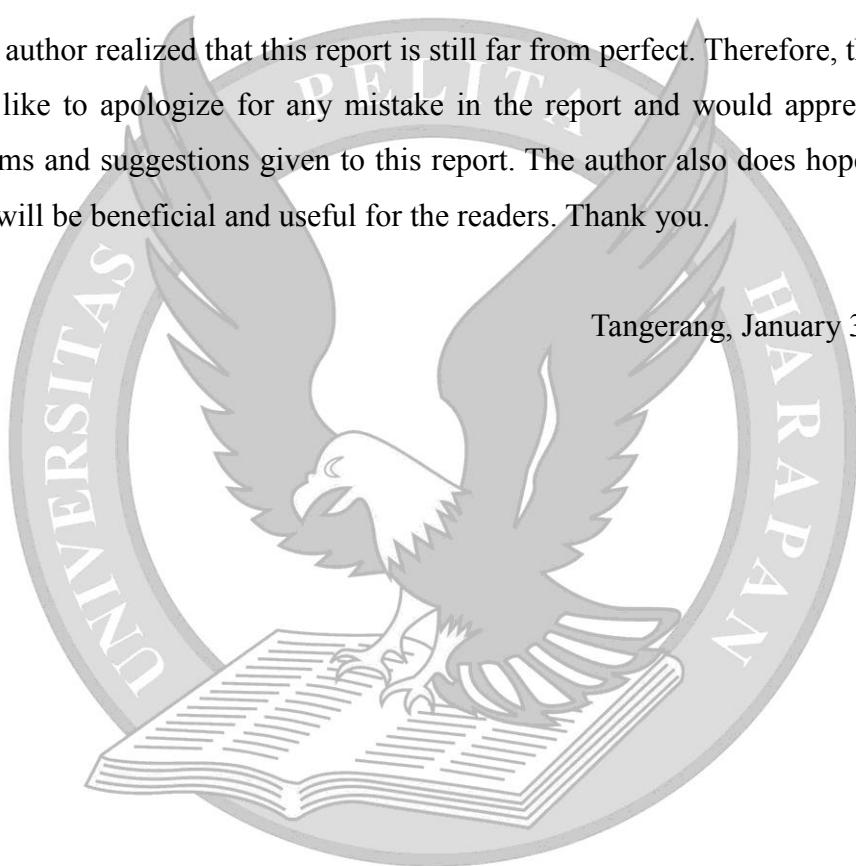
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Author

TABLE OF CONTENT

COVER

FINAL ASSIGNMENT STATEMENT AND UPLOAD AGREEMENT.....	
APPROVAL BY THESIS SUPERVISOR.....	
APPROVAL BY THESIS EXAMINATION COMMITTEE.....	
<i>ABSTRAK.....</i>	v
ABSTRACT.....	vi
ACKNOWLEDGEMENT	vii
TABLE OF CONTENT	x
LIST OF FIGURES	xiii
LIST OF TABLES	xiv
LIST OF APPENDICES	xv

CHAPTER I INTRODUCTION

1.1 Background.....	1
1.2 Research Problem.....	2
1.3 Objectives	3
1.3.1 General Objectives	3
1.3.2 Specific Objectives.....	3

CHAPTER II LITERATURE REVIEW

2.1 Cauliflower	4
2.1.1 Morphology of Cauliflower.....	4
2.1.2 Physicochemical Properties of Cauliflower	5
2.1.3 Cauliflower Puree	6
2.1.4 Dried Cauliflower.....	7
2.2 Fat	8
2.2.1 Animal-based Fat	9
2.2.2 Plant-based Fat	9
2.2.3 Fat in Baked Products.....	10
2.3 Fat Replacer	10
2.3.1 Fat Substitutes	11
2.3.2 Fat Mimetics	11
2.3.2.1 Carbohydrate-based Fat Mimetics	12
2.3.2.2 Protein-based Fat Mimetics	13
2.4 Sponge Cake	14
2.4.1 Sponge Cake Materials.....	14
2.4.1.1 Flour	14
2.4.1.2 Eggs.....	14
2.4.1.3 Sugar	15
2.4.1.4 Oil	15

2.4.1.5 Milk.....	16
2.4.1.6 Vinegar.....	16

CHAPTER III MATERIALS AND METHODS

3.1 Materials and Equipments	17
3.2 Research Stages	18
3.2.1 Preliminary Stage	19
3.2.2 Main Research.....	20
3.3 Experimental Design	22
3.3.1 Preliminary Stage	22
3.3.2 Main Research.....	22
3.4 Method of Analysis	24
3.4.1 Chemical Analysis.....	24
3.4.1.1 Moisture Content (AOAC, 2000)	24
3.4.1.2 Ash Content (AOAC, 2000)	25
3.4.1.3 Carbohydrate Content (FAO, 2003)	25
3.4.1.4 Protein Content (Chang, 2010)	25
3.4.1.5 Fat Content (Min and Ellefson, 2010)	26
3.4.1.6 Total Dietary Fiber Content (AOAC, 1994)	27
3.4.1.7 Pectin Extraction (Panouillé <i>et al.</i> , 2006; Woo <i>et al.</i> , 2010).....	27
3.4.2 Physical Analysis	28
3.4.2.1..... Specific Gravity Determination for Cake Batter (Hussien, 2016).....	28
3.4.2.2 Volume and Height Increase of Cake (Hussien, 2016).....	28
3.4.2.3 Texture Profile Analysis (Hussien, 2016; Hosseini Ghaboos <i>et al.</i> , 2018).....	28
3.4.2.4 Color Analysis (Rodríguez-Garcia <i>et al.</i> , 2012)	29
3.4.3 Sensory Evaluation.....	29
3.4.3.1 Scoring Test (BSN, 2006).....	30
3.4.3.2 Hedonic Test (Hussien, 2016).....	30

CHAPTER IV RESULTS AND DISCUSSION

4.1 Raw Material	31
4.1.1 Cauliflower Puree and Powder.....	31
4.2 Sponge Cake	32
4.2.1 Physical Characteristic of Sponge Cake.....	32
4.2.1.1 Specific Gravity, Volume and Height Increase	32
4.2.1.2 Texture	34
4.2.1.3 Color	38
4.2.2 Sensory Characteristic of Sponge Cake	41
4.2.2.1 Scoring Value.....	41

4.2.2.2 Hedonic Value	44
4.2.3 Proximate of the Best Product.....	46

CHAPTER V CONCLUSIONS AND SUGGESTIONS

5.1 Conclusions	48
5.2 Suggestions.....	49

BIBLIOGRAPHY

APPENDICES

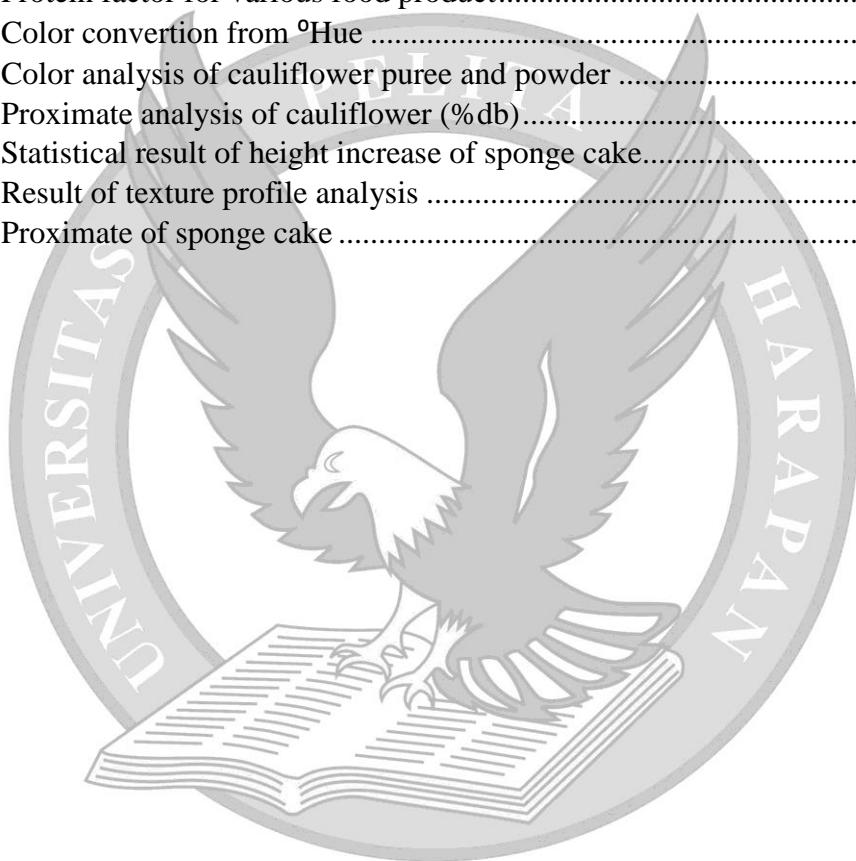


LIST OF FIGURES

Figure 2.1 Cauliflower	4
Figure 3.1 Research method flowchart	18
Figure 3.2 Cauliflower powder and puree processing	19
Figure 3.3 Main research flowchart	21
Figure 4.1 Effect of cauliflower form and concentration on specific gravity of cake batter.....	33
Figure 4.2 Effect of cauliflower form and concentration on volume of sponge cake	34
Figure 4.3 Effect of cauliflower form on hardness of sponge cake	36
Figure 4.4 Effect of cauliflower form and concentration of fat replacer on springiness	37
Figure 4.5 Effect of cauliflower form and concentration of fat replacer on chewiness.....	37
Figure 4.6 Effect of cauliflower form and percentage of fat replacement on L value of crust	39
Figure 4.7 Effect of cauliflower form and percentage of fat replacement on Hue value of crust	40
Figure 4.8 Effect of cauliflower form and percentage of fat replacement on Hue value of crumb	41
Figure 4.9 Effect of cauliflower form and concentration of fat replacer on scoring of crust color	42
Figure 4.10 Effect of cauliflower form and concentration of fat replacer on scoring of texture	43
Figure 4.11 Effect of cauliflower form and concentration of fat replacer on hedonic of crumb color	45
Figure 4.12 Effect of cauliflower form and concentration of fat replacer on hedonic of texture.....	45
Figure 4.13 Effect of cauliflower form and concentration of fat replacer on overall acceptance	46

LIST OF TABLES

Table 2.1 Selected nutritional values of raw and cooked cauliflower	6
Table 3.1 Sponge cake formulation	20
Table 3.2 Experimental design of main research stage I	22
Table 3.3 Protein factor for various food product.....	26
Table 3.4 Color conversion from $^{\circ}$ Hue	29
Table 4.1 Color analysis of cauliflower puree and powder	31
Table 4.2 Proximate analysis of cauliflower (%db).....	32
Table 4.3 Statistical result of height increase of sponge cake.....	34
Table 4.4 Result of texture profile analysis	35
Table 4.5 Proximate of sponge cake	47



LIST OF APPENDICES

APPENDIX A.

Proximate Analysis of Cauliflower Puree	A-1
Moisture Content of Cauliflower Puree.....	A-1
Ash Content of Cauliflower Puree	A-1
Protein Content of Cauliflower Puree	A-2
Crude Fat Content of Cauliflower Puree	A-3
Carbohydrate Content of Cauliflower Puree	A-4

APPENDIX B.

Proximate Analysis of Cauliflower Powder	B-1
Moisture Content of Cauliflower Powder	B-1
Ash Content of Cauliflower Powder	B-1
Protein Content of Cauliflower Powder	B-2
Crude Fat Content of Cauliflower Powder	B-3
Carbohydrate Content of Cauliflower Powder	B-4

APPENDIX C.

Reconstitution of Cauliflower Powder	C-1
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APPENDIX D.

Complex Carbohydrate Analysis of Cauliflower	D-1
Pectin Extraction of Cauliflower	D-1
Total Dietary Fiber of Cauliflower	D-2

APPENDIX E.

Color Analysis of Cauliflower.....	E-1
Color Analysis of Cauliflower Puree	E-1
Color Analysis of Cauliflower Powder	E-1

APPENDIX F.

Physical Analysis of Sponge Cake	F-1
Specific Gravity of Sponge Cake Batter.....	F-1
Volume of Sponge Cake.....	F-5
Height Increase of Sponge Cake.....	F-9
Texture Profile Analysis of Sponge Cake.....	F-13
Color Analysis of Sponge Cake.....	F-32

APPENDIX G.

Questionnaire for Sensory Evaluation.....	G-1
Questionnaire for Scoring Test.....	G-1
Questionnaire for Hedonic Test.....	G-2

APPENDIX H.

Result of Scoring Test	H-1
Scoring of Crust Color.....	H-1
Result of Scoring for Crumb Color	H-3
Result of Scoring for Texture	H-5
Result of Scoring for Taste.....	H-7
Result of Scoring for Aroma	H-9

APPENDIX I.

Result of Hedonic Test	I-1
Result of Hedonic of Crust Color	I-1
Result of Hedonic of Crumb Color	I-3
Result of Hedonic of Texture	I-5
Result of Hedonic of Taste	I-7
Result of Hedonic of Aroma.....	I-9
Result of Hedonic of Overall Acceptance	I-11

APPENDIX J.

Proximate Analysis of Control and Best Product	J-1
Moisture Content of Control and Best Product	J-1
Ash Content of Control and Best Product	J-1
Protein Content of Control and Best Product	J-2
Crude Fat Content of Control and Best Product.....	J-3
Carbohydrate Content of Control and Best Product	J-4

APPENDIX K.

Statistical Analysis of Proximate Analysis of Control and Best Product.....	K-1
T-test of Moisture Content	K-1
T-test for Ash Content	K-1
T-test for Protein Content.....	K-1
T-test for Crude Fat Content.....	K-2
T-test for Carbohydrate Content.....	K-2

APPENDIX A. Proximate Analysis of Cauliflower Puree

A1. Moisture Content of Cauliflower Puree

Table A1. Moisture content of cauliflower puree

Replication	Weight of evaporating dish (g)	Initial weight of sample (g)	Final weight of evaporating dish + sample (g)	Moisture content (%)	Data	
					Average moisture content (%)	Average ± SD
1	38.5822	5.0345	38.9851	92.00		
	39.5045	5.0009	39.9024	92.04	92.02	
	40.3853	5.0324	40.7869	92.02		92.08 ± 0.07
2	41.4527	5.1142	41.8533	92.17		
	38.5822	5.0538	38.9822	92.09	92.14	
	39.5045	5.0244	39.8978	92.17		

Sample Calculation:

$$\begin{aligned} \text{Moisture Content(%)} &= \frac{\text{Initial weight} - \text{final weight}}{\text{Initial weight}} \times 100\% \\ &= \frac{5.0345 - (38.9851 - 38.5822)}{5.0345} \times 100\% \\ &= 92.00\% \end{aligned}$$

A2. Ash Content of Cauliflower Puree

Table A2. Ash content (wet basis) of cauliflower puree

Replication	Weight of crucible (g)	Initial weight of sample (g)	Final weight of crucible + sample (g)	Ash content (%)	Data	
					Average ash content (%)	Average ± SD
1	35.8403	2.0896	35.8532	0.62		
	36.6770	2.0677	36.6903	0.64	0.65	
	35.5070	2.2548	35.5225	0.69		0.65 ± 0.03
2	38.2856	2.0644	38.2981	0.61		
	36.1075	2.0482	36.1213	0.67	0.64	
	41.9767	2.1175	41.9904	0.65		

Sample Calculation:

$$\begin{aligned} \text{Ash Content(%)} &= \frac{\text{Final weight}}{\text{Initial weight}} \times 100\% \\ &= \frac{(35.8532 - 35.8403)}{2.0896} \times 100\% \\ &= 0.62\% \end{aligned}$$

Table A3. Ash content (dry basis) of cauliflower puree

Replication	Moisture content (%)	Data			Average ± SD
		Ash content (% wb)	Ash content (% db)	Average	
I	92.08	0.62	7.79		
		0.64	8.12	8.20	
		0.69	8.68		8.15 ± 0.40
		0.61	7.65		
II		0.67	8.51	8.11	
		0.65	8.17		

Sample Calculation:

$$\begin{aligned} \text{Ash Content (%db)} &= \text{Ash content (%wb)} \times \frac{100}{100 - \text{Moisture content} (\%)} \\ &= 0.62\% \times \frac{100}{100 - 92.08} \\ &= 7.79\% \end{aligned}$$

A3. Protein Content of Cauliflower Puree

Table A4. Protein content of cauliflower puree

Replication	Weight of sample (g)	Volume of HCl used to titrate sample (mL)	Volume of HCl used to titrate blank (mL)	Data		
				Nitrogen content (%)	Protein content (%)	Average protein content (%)
1	2.0728	3.09	0.36	0.37	1.98	
	2.0446	2.85	0.36	0.34	1.83	1.83
	2.0728	2.57	0.25	0.31	1.68	1.78 ± 0.14
2	2.0446	2.45	0.17	0.31	1.67	
	2.0728	2.42	0.17	0.30	1.63	1.72
	2.0446	2.72	0.17	0.35	1.87	

Sample Calculation:

$$\begin{aligned} \text{Protein Content (\%)} &= \frac{(S - B) \times \text{Normality of HCl} \times 14.007 \times \text{Protein Factor} \times 100\%}{\text{weight of sample (g)} \times 1000} \\ &= \frac{(3.09 - 0.36) \times 0.2 \text{ N} \times 14.007 \times 5.36 \times 100\%}{2.0728 \text{ g} \times 1000} \\ &= 1.98\% \end{aligned}$$

Table A5. Protein content (dry basis) of cauliflower puree

Replication	Moisture content (%)	Data			Average ± SD
		Protein content (% wb)	Protein content (% db)	Average protein content (% db)	
1	92.08	1.98	24.96		
		1.83	23.08	23.08	
		1.68	21.21		22.43 ± 1.73
		1.67	21.13		
2		1.63	20.57	21.78	
		1.87	23.63		

Sample Calculation:

$$\begin{aligned} \text{Protein Content (% db)} &= \text{Protein content (% wb)} \times \frac{100}{100 - \text{Moisture content} (\%)} \\ &= 1.98\% \times \frac{100}{100 - 92.08} \\ &= 24.96\% \end{aligned}$$

A4. Crude Fat Content of Cauliflower Puree

Table A6. Crude fat content (wet basis) of cauliflower puree

Replication	Weight of boiling flask (g)	Initial weight of sample (g)	Data			Average ± SD
			Final weight of boiling flask + extracted fat(g)	Fat content (%)	Average fat content (%)	
1	115.0533	3.2005	115.0651	0.37		
	137.7014	3.2511	137.71	0.26	0.27	
	110.5416	3.2351	110.5473	0.18		0.28 ± 0.10
2	115.0533	5.1142	115.0661	0.25		
	137.7014	5.0538	137.7167	0.30	0.28	
	110.5416	5.0244	110.5563	0.29		

Sample Calculation:

$$\begin{aligned} \text{Crude fat content (\%)} &= \frac{\text{Final Weight}}{\text{Initial Weight}} \times 100\% \\ &= \frac{(119.0651 - 115.0533)}{3.2005} \times 100\% \\ &= 0.37\% \end{aligned}$$

Table A7. Crude fat content (dry basis) of cauliflower puree

Replication	Data				
	Moisture content (%)	Fat content (%wb)	Fat content (%db)	Average fat content (%db)	Average ± SD
1		0.37	4.64		
		0.26	3.33	3.40	
	92.08	0.18	2.22		
2		0.25	3.15		3.47 ± 0.80
		0.30	3.81	3.55	
		0.29	3.68		

Sample Calculation:

$$\begin{aligned} \text{Crude fat content (%db)} &= \text{Crude fat content (%wb)} \times \frac{100}{100 - \text{Moisture content} (\%)} \\ &= 0.37\% \times \frac{100}{100 - 92.08} \\ &= 4.64\% \end{aligned}$$

A5. Carbohydrate Content of Cauliflower Puree

Table A8. Carbohydrate (wet basis) of cauliflower puree

Replication	Data						Average ± SD
	Moisture content (%)	Ash content (%)	Protein content (%)	Crude fat content (%)	Carbohydrate content (%)	Average	
I	92.00	0.62	1.98	0.37	5.04		
	92.04	0.64	1.83	0.26	5.22	5.23	
	92.02	0.69	1.68	0.18	5.44		5.22 ± 0.17
II	92.17	0.61	1.67	0.25	5.30		
	92.09	0.67	1.63	0.30	5.31	5.21	
	92.17	0.65	1.87	0.29	5.02		

$$\begin{aligned} \text{Carbohydrate content (\%)} &= 100\% - (\% \text{Moisture} + \% \text{Ash} + \% \text{Protein} + \% \text{Crude fat}) \\ &= 100\% - (92.00\% + 0.62\% + 1.98\% + 0.37\%) \\ &= 5.04\% \end{aligned}$$

Table A9. Carbohydrate (dry basis) of cauliflower puree

Replication	Data				Average ± SD
	Moisture content (%)	Carbohydrate content (wb%)	Carbohydrate content (%db)	Average	
I		5.04	63.64		
		5.22	65.92	66.07	
	92.08	5.44	68.65		65.92 ± 2.08
II		5.30	66.97		
		5.31	67.04	65.78	
		5.02	63.34		

Sample Calculation:

$$\text{Carbohydrate content (\%db)} = \text{Carbohydrate content (\%wb)} \times \frac{100}{100 - \text{Moisture content (\%)}}$$
$$= 5.04\% \times \frac{100}{100 - 92.08}$$
$$= 63.64\%$$

APPENDIX B. Proximate Analysis of Cauliflower Powder

B1. Moisture Content of Cauliflower Powder

Table B1. Moisture content of cauliflower powder

Replication	Data					
	Weight of evaporating dish (g)	Initial weight of sample (g)	Constant weight of sample (g)	Moisture content (%)	Average moisture content (%)	Average ± SD
1	39.0798	3.0259	41.5562	18.16		
	42.5330	3.0295	45.0183	17.96	18.16	
	40.3853	3.0695	42.8916	18.35		18.18 ± 0.59
2	38.5822	3.0748	41.0851	18.60		
	39.5045	3.0292	41.9626	18.85	18.21	
	40.3853	3.0255	42.8912	17.17		

Sample Calculation:

$$\begin{aligned}\text{Moisture Content(%)} &= \frac{\text{Initial weight} - \text{final weight}}{\text{Initial weight}} \times 100\% \\ &= \frac{3.0259 - (41.5562 - 39.0798)}{3.0259} \times 100\% \\ &= 18.16\%\end{aligned}$$

B2. Ash Content of Cauliflower Powder

Table B2. Ash content of cauliflower puree

Replication	Data					
	Weight of crucible (g)	Initial weight of sample (g)	Final weight of crucible + sample (g)	Ash content (%)	Average ash content (%)	Average ± SD
1	35.8043	3.0205	36.0803	7.95		
	36.6770	3.0090	36.8960	7.28	7.48	
	35.5070	3.0322	35.7260	7.22		7.45 ± 0.30
2	38.2856	3.0616	38.5211	7.69		
	36.1075	3.0312	36.2380	7.27	7.41	
	41.9767	3.0177	42.1960	7.27		

Sample Calculation:

$$\begin{aligned}\text{Moisture Content(%)} &= \frac{\text{Final weight}}{\text{Initial weight}} \times 100\% \\ &= \frac{(36.0803 - 35.8043)}{3.0205} \times 100\% \\ &= 7.95\%\end{aligned}$$

Table B3. Ash content (dry basis) of cauliflower powder

Replication	Data					
	Moisture content (%)	Ash content (% wb)	Ash content (% db)	Average	Average ± SD	
I	18.18	7.95	9.71			
		7.28	8.90	9.14		
	II	7.22	8.83		9.10 ± 0.37	
		7.69	9.40			
II		7.27	8.89	9.06		
		7.27	8.88			

Sample Calculation:

$$\begin{aligned} \text{Ash Content (%db)} &= \text{Ash content (%wb)} \times \frac{100}{100 - \text{Moisture content} (\%)} \\ &= 7.95\% \times \frac{100}{100 - 18.18} \\ &= 9.71\% \end{aligned}$$

B3. Protein Content of Cauliflower Powder

Table B4. Protein content (wet basis) of cauliflower powder

Replication	Data						
	Weight of sample (g)	Volume of HCl used to titrate sample (mL)	Volume of HCl used to titrate blank (mL)	Nitrogen content (%)	Protein content (%)	Average protein content (%)	
1	2.0694	30.74	0.04	4.15	22.26		
	2.1467	32.09	0.04	4.18	22.41	22.16	
	2.224	32.34	0.04	4.07	21.80		20.57 ± 1.82
2	2.3013	30.67	0.25	3.70	19.84		
	2.3786	30.09	0.17	3.52	18.88	18.99	
	2.4559	30.03	0.17	3.40	18.25		

Sample Calculation:

$$\begin{aligned} \text{Protein Content (\%)} &= \frac{(S - B) \times \text{Normality of HCl} \times 14.007 \times \text{Protein Factor} \times 100\%}{\text{weight of sample (g)} \times 1000} \\ &= \frac{(30.74 - 0.04) \times 0.2 \text{ N} \times 14.007 \times 5.36}{2.0694 \text{ g} \times 1000} \times 100\% \\ &= 22.26\% \end{aligned}$$

Table B5. Protein content (dry basis) of cauliflower powder

Replication	Data				
	Moisture content (%)	Protein content (%wb)	Protein content (%db)	Average protein content (%db)	Average \pm SD
1	18.16	22.26	27.21		
	17.96	22.41	27.39	27.08	
	18.35	21.80	26.64		25.14 \pm 2.22
2	18.60	19.84	24.25		
	18.85	18.88	23.07	23.21	
	17.17	18.25	22.30		

Sample Calculation:

$$\begin{aligned} \text{Protein Content (%db)} &= \text{Protein content (%wb)} \times \frac{100}{100 - \text{Moisture content} (\%)} \\ &= 22.26\% \times \frac{100}{100 - 18.18} \\ &= 27.21\% \end{aligned}$$

B4. Crude Fat Content of Cauliflower Powder

Table B6. Crude fat content (wet basis) of cauliflower powder

Replication	Data					
	Weight of boiling flask (g)	Initial weight of sample (g)	Constant weight of boiling flask (g)	Fat content (%)	Average fat content (%)	Average \pm SD
1	115.0533	3.0748	115.1667	3.69		
	137.7014	3.0295	137.795	3.09	3.30	
	110.5416	3.0695	110.6373	3.12		3.25 \pm 0.23
2	115.0533	2.0677	115.118	3.13		
	137.7014	2.063	137.7703	3.34	3.20	
	110.5416	2.0525	110.6057	3.12		

Sample Calculation:

$$\begin{aligned} \text{Crude fat content (\%)} &= \frac{\text{Final Weight}}{\text{Initial Weight}} \times 100\% \\ &= \frac{(115.1667 - 115.0533)}{3.0748} \times 100\% \\ &= 3.69\% \end{aligned}$$

Table B7. Crude fat content (dry basis) of cauliflower powder

Replication	Data				
	Moisture content (%)	Fat content (%wb)	Fat content (%db)	Average fat content (%db)	Average \pm SD
1		3.69	4.51		
		3.09	3.78	4.03	
2	18.18	3.12	3.81		3.97 \pm 0.29
		3.13	3.82		
2		3.34	4.08	3.91	
		3.12	3.82		

Sample Calculation:

$$\begin{aligned} \text{Crude fat content (%db)} &= \text{Crude fat content (%wb)} \times \frac{100}{100 - \text{Moisture content} (\%)} \\ &= 3.69\% \times \frac{100}{100 - 18.18} \\ &= 4.51\% \end{aligned}$$

B5. Carbohydrate Content of Cauliflower Powder

Table B8. Carbohydrate content of cauliflower powder

Replication	Data						
	Moisture content (%)	Ash content (%)	Protein content (%)	Crude fat content (%)	Carbohydrate content (%)	Average	Average \pm SD
I	18.16	7.95	22.26	3.69	47.94		
	17.96	7.28	22.41	3.09	49.26	48.11	
	18.35	7.22	24.17	3.12	47.14		48.55 \pm 1.07
II	18.60	7.69	22.36	3.13	48.22		
	18.85	7.27	22.01	3.34	48.52	48.98	
	17.17	7.27	22.24	3.12	50.20		

Sample Calculation:

$$\begin{aligned} \text{Carbohydrate content (\%)} &= 100\% - \text{Moisture content (\%)} - \text{Ash content (\%)} - \text{Protein content (\%)} \\ &\quad - \text{Crude fat content (\%)} \\ &= 100\% - 18.16\% - 7.95\% - 22.26\% - 3.69\% \\ &= 47.94\% \end{aligned}$$

Table B9. Carbohydrate (dry basis) of cauliflower powder

Replication	Data				
	Moisture content (%)	Carbohydrate content (wb%)	Carbohydrate content (%db)	Average	Average ± SD
I	18.18	47.94	58.59		
		49.26	60.21	59.77	
		49.51	60.52		61.78 ± 2.68
II		50.74	62.02		
		51.65	63.13	63.79	
		54.19	66.23		

Sample Calculation:

$$\begin{aligned} \text{Carbohydrate content (%db)} &= \text{Carbohydrate content (%wb)} \times \frac{100}{100 - \text{Moisture content} (\%)} \\ &= 47.94\% \times \frac{100}{100 - 18.18} \\ &= 58.59\% \end{aligned}$$

APPENDIX C. Reconstitution of Cauliflower Powder

Table C1. Moisture content of cauliflower puree

Replication	Weight of evaporating dish (g)	Initial weight of sample (g)	Final weight of evaporating dish + sample (g)	Moisture content (%)	Data	
					Average moisture content (%)	Average ± SD
1	38.5822	5.0345	38.9851	92.00		
	39.5045	5.0009	39.9024	92.04	92.02	
	40.3853	5.0324	40.7869	92.02		92.08 ± 0.07
2	41.4527	5.1142	41.8533	92.17		
	38.5822	5.0538	38.9822	92.09	92.14	
	39.5045	5.0244	39.8978	92.17		

Table C2. Moisture content of cauliflower powder

Replication	Weight of evaporating dish (g)	Initial weight of sample (g)	Final weight of evaporating dish + sample (g)	Moisture content (%)	Data	
					Average moisture content (%)	Average ± SD
1	39.0798	3.0259	41.5562	18.16		
	42.5330	3.0295	45.0183	17.96	18.16	
	40.3853	3.0695	42.8916	18.35		18.18 ± 0.59
2	38.5822	3.0748	41.0851	18.60		
	39.5045	3.0292	41.9626	18.85	18.21	
	40.3853	3.0255	42.8912	17.17		

Cauliflower powder reconstitution calculation:

Cauliflower puree: 92.08% water, 7.92% solid

$$\text{Average initial weight} = \frac{3.0259 + 3.0295 + 3.0695 + 3.0748 + 3.0292 + 3.0255}{6} \\ = 3.0424 \text{ g}$$

$$\text{Average final weight} = \frac{2.4764 + 2.4853 + 2.5063 + 2.5029 + 2.4581 + 2.5059}{6} \\ = 2.4892 \text{ g}$$

$$\frac{3.0424 \text{ g}}{2.4892 \text{ g}} = \frac{x}{7.92\%} = \frac{\text{solid} + \text{water}}{\text{solid}}$$

$$x = 9.68\%$$

Water that is already in the powder = 9.68 % - 7.92% = 1.76 %

Water needed to reconstitute cauliflower powder = 92.08% - 1.76% = 90.32%

To make 10 g of cauliflower powder reconstitution:

9.68% x 10 g = 0.968 g of cauliflower powder

90.32% x 10 g = 9.032 g of water

APPENDIX D. Complex Carbohydrate Analysis of Cauliflower

D1. Pectin Extraction of Cauliflower

Table D1. Result of cauliflower pectin extraction

Replication	Initial weight of sample (g)	Weight of evaporating dish (g)	Final weight of evaporating dish and pectin (g)	Data		
				Pectin content (%)	Average	Average ± SD
I	10.0073	36.1494	37.4827	13.32		
	10.0356	37.4763	38.8584	13.77	13.67	
	10.0423	41.6666	43.0654	13.93		13.53 ± 0.26
II	10.0293	41.6666	43.0073	13.37		
	10.0223	36.1494	37.5018	13.49	13.38	
	10.0321	37.4763	38.8092	13.29		

Sample Calculation:

$$\begin{aligned}
 \text{Pectin content (\%)} &= \frac{\text{Final weight}}{\text{Initial weight}} \times 100\% \\
 &= \frac{(37.4827 - 36.1494)}{10.0073} \times 100\% \\
 &= 13.32\%
 \end{aligned}$$

D2. Total Dietary Fiber of Cauliflower

Replication I, page 1

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RESULT OF ANALYSIS	
<i>Laporan Hasil Pengujian</i> No : SIG.LHP.XI.2019.095226	
I. Number / Nomor	1.1. Order No. / No. Order : SIG.Mark.R.X.2019.020699
II. Principal / Pelanggan	2.1. Name / Nama : Grace Yovita Mulyono 2.2. Address / Alamat : Taman Permata Buana Jl. Pulau Laki Raya Blok N5 No.5 RT.09 RW.09 Jakarta Barat DKI Jakarta 11610 2.3. Phone / Telepon : 08111901290 2.4. Contact Person / Personil Penghubung : Grace Yovita Mulyono NIM : 00000019742
III. Sample / Contoh Uji	3.1. Sample Code / Kode Sampel : - 3.2. Batch Number / No Batch : - 3.3. Lot Number / No Lot : - 3.4. Packaging / Kemasan : - 3.5. Production Date / Tanggal Produksi : - 3.6. Expire Date / Tanggal Kadaluarsa : - 3.7. Factory Name / Nama Pabrik : - 3.8. Factory Address / Alamat Pabrik : - 3.9. Trade Mark / Nama Dagang : - 3.10. Sample Name / Nama Sample : Tepung Kembang Kol (Replikasi 1) 3.11. Other Information / Keterangan Lain : - 3.12. Date of Received / Diterima : October 30, 2019 3.13. Date of Analysis / Tanggal Uji : October 31, 2019 - November 04, 2019 3.14. Type of Analysis / Jenis Uji : Enclosed
IV. Result / Hasil Uji	Result of analysis page 1
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Replication I, page 2

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No. 28/F-PP/SMM-SIG
Revist : 3

Result of Analysis
No : SIG.LHP.XI.2019.095226

No.	Parameter	Unit	Result		Limit Of Detection	Method
			Simplo	Duplo		
1	Dietary fiber	%	35.44	35.68	-	18-8-6-2/MU/SMM-SIG

Bogor, November 05, 2019
PT. Saraswanti Indo Genetech

Dwi Yulianto Laksono, S.Si
Laboratory Manager

Result of analysis page 2

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No. 28/F-PP/SMM-SIG
Revist : 3

RESULT OF ANALYSIS

Laporan Hasil Pengujian
No : SIG.LHP.XI.2019.095227

I. Number / Nomor

1.1. Order No. / No. Order : SIG.Mark.R.X.2019.020699

II. Principal / Pelanggan

2.1. Name / Nama : Grace Yovita Mulyono
2.2. Address / Alamat : Taman Permata Buana Jl. Pulau Laki Raya Blok N5 No.5
RT.09 RW.09 Jakarta Barat DKI Jakarta 11610
2.3. Phone / Telepon : 08111901290
2.4. Contact Person / Personil Penghubung : Grace Yovita Mulyono NIM : 00000019742

III. Sample / Contoh Uji

3.1. Sample Code / Kode Sampel : -
3.2. Batch Number / No Batch : -
3.3. Lot Number / No Lot : -
3.4. Packaging / Kemasan : -
3.5. Production Date / Tanggal Produksi : -
3.6. Expire Date / Tanggal Kadaluarsa : -
3.7. Factory Name / Nama Pabrik : -
3.8. Factory Address / Alamat Pabrik : -
3.9. Trade Mark / Nama Dagang : -
3.10. Sample Name / Nama Sample : Tepung Kembang Kol (Replikasi 2)
3.11. Other Information / Keterangan Lain : -
3.12. Date of Received / Diterima : October 30, 2019
3.13. Date of Analysis / Tanggal Uji : October 31, 2019 - November 04, 2019
3.14. Type of Analysis / Jenis Uji : Enclosed

IV. Result / Hasil Uji

Result of analysis page 1

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Replication II, page 2

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No. 28/F-PP/SMM-SIG
Revist : 3

Result of Analysis
No : SIG.LHP.XI.2019.095227

No.	Parameter	Unit	Result		Limit Of Detection	Method
			Simplo	Duplo		
1	Dietary fiber	%	34.08	33.94	-	18-8-6-2/MU/SMM-SIG

Bogor, November 05, 2019
PT. Saraswanti Indo Genetech

Dwi Yulianto Laksono, S.Si
Laboratory Manager

Result of analysis page 2

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APPENDIX E. Color Analysis of Cauliflower

E1. Color Analysis of Cauliflower Puree

Table E1. Result of cauliflower puree color analysis

Replication	Parameter							
	L*			Hue				
	Value	Average	Average ± SD	a*	b*	Value	Average	Average ± SD
I	47.06			3.70	8.86	67.33		
	48.79	47.70		3.69	10.38	70.43	68.70	
	47.24		47.32 ± 0.85	3.67	9.23	68.32		68.65 ± 1.96
II	46.36			4.06	9.10	65.96		
	46.76	46.95		3.64	9.28	68.58	68.60	
	47.73			3.20	9.44	71.27		

Sample Calculation

$$\begin{aligned}\text{Hue } (\theta) &= \tan^{-1}(b/a) \\ &= \tan^{-1} (8.86/3.70) \\ &= 67.33^\circ\end{aligned}$$

E2. Color Analysis of Cauliflower Powder

Table E2. Result of cauliflower powder color analysis

Replication	Parameter							
	L*			Hue				
	Value	Average	Average ± SD	a*	b*	Value	Average	Average ± SD
I	48.60			3.45	18.36	79.36		
	48.84	48.65		3.38	18.62	79.71	79.47	
	48.51		49.86 ± 1.33	3.46	18.40	79.35		79.62 ± 0.21
II	51.04			3.79	20.90	79.72		
	51.10	51.07		3.79	20.99	79.76	79.76	
	51.08			3.79	21.05	79.79		

Sample Calculation

$$\begin{aligned}\text{Hue } (\theta) &= \tan^{-1}(b/a) \\ &= \tan^{-1} (18.36/3.45) \\ &= 79.36^\circ\end{aligned}$$

APPENDIX F. Physical Analysis of Sponge Cake

F1. Specific Gravity of Sponge Cake Batter

Table F1. Specific gravity of sponge cake batter

(a) Control

Form of cauliflower	Replication	Cauliflower concentration (%)			
		0		Specific gravity	Average
Puree	1	Weight of batter (g)	Weight of water (g)		
		57.86	90.25	0.64	
		57.97	90.25	0.64	0.65
	2	60.78	90.25	0.67	0.65 ± 0.01
		59.80	90.25	0.66	
		57.93	90.25	0.64	0.65
Powder	1	58.14	90.25	0.64	
		57.86	90.25	0.64	
		57.97	90.25	0.64	0.65
	2	60.78	90.25	0.67	0.65 ± 0.01
		59.80	90.25	0.66	
		57.93	90.25	0.64	0.65
		58.14	90.25	0.64	

F1

(b) Treatment

Form of cauliflower	Replication	Cauliflower concentration (%)							
		25				50			
		Weight of batter (g)	Weight of water (g)	Specific gravity	Average	Average ± SD	Weight of batter (g)	Weight of water (g)	Specific gravity
Puree	1	58.98	90.25	0.65			59.44	90.25	0.66
		60.16	90.25	0.67	0.66		60.12	90.25	0.67
		58.87	90.25	0.65		0.66 ± 0.01	59.96	90.25	0.66
	2	59.76	90.25	0.66		0.01	60.45	90.25	0.67
		58.94	90.25	0.65	0.66		59.34	90.25	0.66
		60.02	90.25	0.67			60.79	90.25	0.67
Powder	1	62.66	90.25	0.69			61.40	90.25	0.68
		60.46	90.25	0.67	0.68		63.09	90.25	0.70
		60.55	90.25	0.67		0.68 ± 0.01	61.45	90.25	0.68
	2	61.79	90.25	0.68		0.01	60.96	90.25	0.68
		61.43	90.25	0.68	0.68		61.14	90.25	0.68
		61.92	90.25	0.69			59.92	90.25	0.66

F2

Treatment (continued)

Form of cauliflower	Replication	Cauliflower concentration (%)							
		75				100			
		Weight of batter (g)	Weight of water (g)	Specific gravity	Average	Average ± SD	Weight of batter (g)	Weight of water (g)	Specific gravity
Puree	1	63.47	90.25	0.70			61.95	90.25	0.69
		61.63	90.25	0.68	0.69		61.81	90.25	0.68
		60.93	90.25	0.68		0.69 ± 0.01	62.97	90.25	0.70
	2	63.77	90.25	0.71		0.01	63.39	90.25	0.70
		62.79	90.25	0.70	0.69		60.83	90.25	0.67
		61.19	90.25	0.68			61.76	90.25	0.68
Powder	1	62.60	90.25	0.69			61.54	90.25	0.68
		60.21	90.25	0.67	0.68		61.95	90.25	0.69
		60.06	90.25	0.67		0.68 ± 0.01	60.33	90.25	0.67
	2	62.94	90.25	0.70		0.01	59.78	90.25	0.66
		60.44	90.25	0.67	0.68		61.76	90.25	0.68
		61.23	90.25	0.68			62.19	90.25	0.69

Sample calculation:

$$\begin{aligned}
 \text{Specific gravity} &= \frac{\text{Weight of batter (g)}}{\text{Weight of water (g)}} \\
 &= \frac{57.86 \text{ g}}{90.25 \text{ g}} \\
 &= 0.64
 \end{aligned}$$

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Specific_Gravity

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.002 ^a	7	.000	7.286	.006
Intercept	7.358	1	7.358	235445.000	.000
Form	5.625E-005	1	5.625E-005	1.800	.217
Concentration	.001	3	.000	8.200	.008
Form * Concentration	.001	3	.000	8.200	.008
Error	.000	8	3.125E-005		
Total	7.359	16			
Corrected Total	.002	15			

a. R Squared = .864 (Adjusted R Squared = .746)

2. Duncan

Specific_Gravity

Duncan

Combination	N	Subset	
		1	2
Puree25	2	.6600	
Puree50	2	.6650	
Powder50	2		.6800
Powder25	2		.6800
Powder75	2		.6800
Powder100	2		.6800
Puree75	2		.6900
Puree100	2		.6900
Sig.		.397	.136

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 3.125E-005.

a. Uses Harmonic Mean Sample Size = 2.000.

b. Alpha = 0.05.

F2. Volume of Sponge Cake

Table F2. Volume of sponge cake

(a) Control

Form of cauliflower	Replication	Cauliflower concentration (%)		
		0 Volume (mL)	Average	Average ± SD
Puree	1	215		
		200	208.33	
		210		206.67 ± 6.06
	2	205		
		210	205.00	
		200		
Powder	1	215		
		200	208.33	
		210		206.67 ± 6.06
	2	205		
		210	205.00	
		200		

(b) Treatment

Form of cauliflower	Replication	Cauliflower concentration (%)								
		25		50		75				
		Volume (mL)	Average	± SD	Volume (mL)	Average	± SD	Volume (mL)	Average	± SD
Puree	1	190			180			150		
		190	191.67		170	171.67		155	155.00	
		195		190.83 ± 3.76	165		170.00 ± 5.47	160		154.17 ± 3.76
	2	190			165			155		
		185	190.00		170	168.33		155	153.33	
		195			170			150		
Powder	1	180			160			150		
		185	181.67		165	163.33		145	148.33	
		180		182.50 ± 2.74	165		163.33 ± 4.08	150		147.50 ± 4.18
	2	180			170			150		
		185	183.33		160	163.33		140	146.67	
		185			160			150		

F-7

Treatment (Continued)

Form of cauliflower	Replication	Cauliflower concentration (%)		
		Volume (mL)	100 Average	Average \pm SD
Puree	1	130		
		130	130.00	
		130		130.83 \pm 2.04
	2	130		
		135	131.67	
		130		
Powder	1	120		
		115	115.00	
		110		115.83 \pm 3.76
	2	115		
		115	116.67	
		120		

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Volume

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	8962.906 ^a	7	1280.415	736.336	.000
Intercept	393756.250	1	393756.250	226439.847	.000

F-8

Form	336.172	1	336.172	193.325	.000
Concentration	8579.522	3	2859.841	1644.626	.000
Form * Concentration	47.211	3	15.737	9.050	.006
Error	13.911	8	1.739		
Total	402733.067	16			
Corrected Total	8976.817	15			

a. R Squared = .998 (Adjusted R Squared = .997)

2. Duncan

Volume

Duncan

Combination	N	Subset							
		1	2	3	4	5	6	7	8
Powder100	2	115.8350							
Puree100	2		130.8350						
Powder75	2			147.5000					
Puree75	2				154.1650				
Powder50	2					163.3300			
Puree50	2						170.0000		
Powder25	2							182.5000	
Puree25	2								190.8350
Sig.		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 1.739.

a. Uses Harmonic Mean Sample Size = 2.000.

b. Alpha = 0.05.

F3. Height Increase of Sponge Cake

Table F3. Height increase of sponge cake

(a) Control

Form of cauliflower	Replication	Cauliflower concentration (%)				
		Initial height (cm)	Final height (cm)	Height increase (cm)	Average	Average ± SD
Puree	1	2.50	4.30	1.80		
		2.50	4.30	1.80	1.77	
		2.50	4.20	1.70		1.77 ±
	2	2.50	4.30	1.80		0.05
		2.50	4.20	1.70	1.77	
		2.50	4.30	1.80		
Powder	1	2.50	4.30	1.80		
		2.50	4.30	1.80	1.77	
		2.50	4.20	1.70		1.77 ±
	2	2.50	4.30	1.80		0.05
		2.50	4.20	1.70	1.77	
		2.50	4.30	1.80		

(b) Treatment

Form of cauliflower	Replication	Cauliflower concentration (%)									
		25					50				
		Initial height (cm)	Final height (cm)	Height increase (cm)	Average	Average \pm SD	Initial height (cm)	Final height (cm)	Height increase (cm)	Average	Average \pm SD
Puree	1	2.50	4.20	1.70	1.67		2.50	3.90	1.40	1.43	
		2.50	4.30	1.80			2.50	3.90	1.40		
		2.50	4.00	1.50		1.63 \pm 0.12	2.50	4.00	1.50		1.40 \pm 0.09
	2	2.50	4.00	1.50	1.60		2.50	4.00	1.50	1.37	
		2.50	4.10	1.60			2.50	3.80	1.30		
		2.50	4.20	1.70			2.50	3.80	1.30		
Powder	1	2.50	4.20	1.70			2.50	3.70	1.30		
		2.50	4.10	1.60	1.63		2.50	3.70	1.20	1.23	
		2.50	4.10	1.60		1.60 \pm 0.06	2.50	3.60	1.20		1.12 \pm 0.08
	2	2.50	4.10	1.60	1.57		2.50	3.50	1.30	1.30	
		2.50	4.00	1.50			2.50	3.60	1.30		
		2.50	4.10	1.60			2.50	3.60	1.30		

Treatment (Continued)

Form of cauliflower	Replication	Cauliflower concentration (%)									
		75					100				
		Initial height (cm)	Final height (cm)	Height increase (cm)	Average	Average ± SD	Initial height (cm)	Final height (cm)	Height increase (cm)	Average	Average ± SD
Puree	1	2.50	3.70	1.20	1.27		2.50	3.20	0.90	0.87	
		2.50	3.80	1.30		1.23 ± 0.05	2.50	3.20	0.90		0.67 ± 0.08
		2.50	3.80	1.30			2.50	3.10	0.80		
	2	2.50	3.70	1.20	1.20		2.50	3.30	0.80	0.80	
		2.50	3.70	1.20			2.50	3.10	0.80		
		2.50	3.70	1.20			2.50	3.10	0.80		
Powder	1	2.50	3.30	1.10			2.50	3.00	0.60		
		2.50	3.30	1.20	1.10		2.50	3.00	0.70	0.63	
		2.50	3.40	1.00		1.12 ± 0.08	2.50	3.10	0.60		0.67 ± 0.05
	2	2.50	3.40	1.10	1.13		2.50	3.00	0.70	0.70	
		2.50	3.40	1.10			2.50	2.90	0.70		
		2.50	3.30	1.20			2.50	3.00	0.70		

F-12

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Height_Increase

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1.637 ^a	7	.234	114.782	.000
Intercept	23.766	1	23.766	11664.110	.000
Form	.053	1	.053	25.963	.001
Concentration	1.574	3	.525	257.558	.000
Form * Concentration	.010	3	.003	1.611	.262
Error	.016	8	.002		
Total	25.419	16			
Corrected Total	1.653	15			

a. R Squared = .990 (Adjusted R Squared = .982)

2. Duncan

Height_Increase

Duncan

Concentration	N	Subset			
		1	2	3	4
100	4	.7500			
75	4		1.1750		
50	4			1.3325	
25	4				1.6175

F-13

Sig.		1.000	1.000	1.000	1.000
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Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .007.

a. Uses Harmonic Mean Sample Size = 4.000.

b. Alpha = 0.05.

F4. Texture Profile Analysis of Sponge Cake

Table F4. Hardness of sponge cake

(a) Control

Form of cauliflower	Replication	Cauliflower concentration (%)		
		0	Average	Average ± SD
Puree	1	271.641		
		269.568	262.936	
		247.599		240.725 ± 29.11
	2	242.556		
		211.675	218.515	
		201.313		
Powder	1	271.641		
		269.568	262.936	
		247.599		240.725 ± 29.11
	2	242.556		
		211.675	218.515	
		201.313		

(b) Treatment

Form of cauliflower	Replication	Cauliflower concentration (%)										
		25			50			75				
		Value	Average	Average ± SD		Value	Average	Average ± SD		Value	Average	Average ± SD
Puree	1	242.211			243.731			218.791				
		205.458	218.975		210.639	220.219		240.138	243.017			
		209.257		222.522 ± 17.98	206.287		222.415 ± 18.90	270.121		243.869 ± 19.25		
	2	204.352			201.224			247.461				
		239.862	226.068		243.316	224.611		259.275	244.721			
		233.990			229.292			227.427				
Powder	1	226.874			228.187			225.354				
		257.133	248.843		239.003	242.846		244.421	243.569			
		262.522		249.615 ± 21.50	261.347		242.494 ± 14.61	260.933		244.445 ± 17.56		
	2	239.862			228.808			232.746				
		282.142	250.386		238.135	242.142		233.368	245.320			
		229.154			259.482			269.845				

Treatment (continued)

Form of cauliflower	Replication	Cauliflower concentration (%)		
		100 Value	Average	Average ± SD
Puree	1	218.031		
		219.827	230.305	
		253.057		231.065 ± 14.49
	2	224.663		
		225.630	231.825	
Powder	1	245.181		
		258.584		
		263.675	260.327	
		258.722		260.135 ± 5.23
	2	259.896		
		252.228	259.942	
		267.703		

1. Univariate Analysis of Variance (Hardness)

Tests of Between-Subjects Effects

Dependent Variable: Hardness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2463.726 ^a	7	351.961	69.605	.000

Intercept	918298.642	1	918298.642	181605.273	.000
Form	1475.213	1	1475.213	291.742	.000
Concentration	481.162	3	160.387	31.719	.000
Form * Concentration	507.351	3	169.117	33.445	.000
Error	40.453	8	5.057		
Total	920802.820	16			
Corrected Total	2504.178	15			

a. R Squared = .984 (Adjusted R Squared = .970)

2. Duncan

Hardness

Duncan

Combination	N	Subset				
		1	2	3	4	5
Puree50	2	222.41500				
Puree25	2	222.52150				
Puree100	2		231.06500			
Powder50	2			242.49400		
Puree75	2			243.86900		
Powder75	2			244.44450	244.44450	
Powder25	2				249.61450	
Powder100	2					260.13450
Sig.		.963	1.000	.429	.051	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 5.057.

a. Uses Harmonic Mean Sample Size = 2.000.

b. Alpha = 0.05.

3. Independent Summary T-test

a. Puree (25%)

Summary Data

	N	Mean	Std. Deviation	Std. Error Mean
Control	2.000	240.725	29.110	20.584
Puree25	2.000	222.522	17.980	12.714

Independent Samples Test

	Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
Equal variances assumed	18.203	24.194	.752	2.000	.530
Equal variances not assumed	18.203	24.194	.752	1.666	.544

Hartley test for equal variance: F = 2.621. Sig. = 0.2761

b. Puree (50%)

Summary Data

	N	Mean	Std. Deviation	Std. Error Mean
Control	2.000	240.725	29.110	20.584
Puree50	2.000	222.415	18.900	13.364

Independent Samples Test

	Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
Equal variances assumed	18.310	24.542	.746	2.000	.533
Equal variances not assumed	18.310	24.542	.746	1.716	.544

Hartley test for equal variance: F = 2.372. Sig. = 0.2965

c. Puree (75%)

Summary Data

	N	Mean	Std. Deviation	Std. Error Mean
Control	2.000	240.725	29.110	20.584
Puree75	2.000	243.869	19.250	13.612

Independent Samples Test

	Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
Equal variances assumed	-3.144	24.677	-.127	2.000	.910
Equal variances not assumed	-3.144	24.677	-.127	1.734	.912

Hartley test for equal variance: F = 2.287. Sig. = 0.3042

d. Puree (100%)

Summary Data

	N	Mean	Std. Deviation	Std. Error Mean
Control	2.000	240.725	29.110	20.584
Puree100	2.000	231.065	14.490	10.246

Independent Samples Test

	Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
Equal variances assumed	9.660	22.993	.420	2.000	.715
Equal variances not assumed	9.660	22.993	.420	1.467	.728

Hartley test for equal variance: F = 4.036. Sig. = 0.1986

e. Powder (25%)

Summary Data

	N	Mean	Std. Deviation	Std. Error Mean
Control	2.000	240.725	29.110	20.584
Powder25	2.000	249.615	21.500	15.203

Independent Samples Test

	Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
Equal variances assumed	-8.890	25.589	-.347	2.000	.761
Equal variances not assumed	-8.890	25.589	-.347	1.841	.764

Hartley test for equal variance: F = 1.833. Sig. = 0.3530

f. Powder (50%)

Summary Data

	N	Mean	Std. Deviation	Std. Error Mean
Control	2.000	240.725	29.110	20.584
Powder50	2.000	242.494	14.610	10.331

Independent Samples Test

	Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
Equal variances assumed	-1.769	23.031	-.077	2.000	.946
Equal variances not assumed	-1.769	23.031	-.077	1.474	.948

Hartley test for equal variance: F = 3.970. Sig. = 0.2012

g. Powder (75%)

Summary Data

	N	Mean	Std. Deviation	Std. Error Mean
Control	2.000	240.725	29.110	20.584
Powder75	2.000	244.445	17.560	12.417

Independent Samples Test

	Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
Equal variances assumed	-3.720	24.039	-.155	2.000	.891
Equal variances not assumed	-3.720	24.039	-.155	1.643	.894

Hartley test for equal variance: F = 2.748. Sig. = 0.2668

h. Powder (100%)

Summary Data

	N	Mean	Std. Deviation	Std. Error Mean
Control	2.000	240.725	29.110	20.584
Powder100	2.000	260.135	5.230	3.698

Independent Samples Test

	Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
Equal variances assumed	-19.410	20.913	-.928	2.000	.451
Equal variances not assumed	-19.410	20.913	-.928	1.064	.516

Hartley test for equal variance: F = 30.980. Sig. = 0.0313

F-21

Table F5. Springiness of sponge cake

(a) Control

Form of cauliflower	Replication	Cauliflower concentration (%)		
		0	Average	Average ± SD
		Value	Average	Average ± SD
Puree	1	0.900		
		0.875	0.893	
		0.905		0.907 ± 0.02
	2	0.921		0.02
		0.930	0.920	
		0.909		
Powder	1	0.900		
		0.875	0.893	
		0.905		0.907 ± 0.02
	2	0.921		0.02
		0.930	0.920	
		0.909		

(b) Treatment

Form of cauliflower	Replication	Cauliflower concentration (%)							
		25			50			75	
		Value	Average	Average ± SD	Value	Average	Average ± SD	Value	Average
Puree	1	0.932			0.895			0.909	
		0.958	0.925		0.894	0.895		0.910	0.917
		0.885		0.927 ± 0.03	0.895		0.897 ± 0.02	0.933	0.918 ± 0.01
	2	0.928		0.924			0.909		
		0.912	0.929		0.871	0.900		0.929	0.919
		0.947		0.904			0.919		
Powder	1	0.948			0.958			0.868	
		0.868	0.934		0.953	0.963		0.911	0.877
		0.986		0.931 ± 0.04	0.979		0.943 ± 0.03	0.853	0.890 ± 0.05
	2	0.923		0.927			0.906		
		0.939	0.928		0.889	0.922		0.974	0.902
		0.923		0.949			0.826		

Treatment (continued)

Form of cauliflower	Replication	Cauliflower concentration (%)		
		100 Value	Average	Average ± SD
Puree	1	0.897		
		0.894	0.908	
		0.934		0.903 ± 0.03
	2	0.894		
		0.934	0.897	
Powder	1	0.862		
		0.872		
		0.865	0.870	
	2	0.873		0.887 ± 0.03
		0.896		
	2	0.940	0.903	
		0.874		

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Springiness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.006 ^a	7	.001	3.824	.040
Intercept	13.302	1	13.302	59171.232	.000
Form	5.063E-006	1	5.063E-006	.023	.884
Concentration	.003	3	.001	4.313	.044
Form * Concentration	.003	3	.001	4.603	.037
Error	.002	8	.000		
Total	13.310	16			
Corrected Total	.008	15			

a. R Squared = .770 (Adjusted R Squared = .569)

2. Duncan

Springiness

Duncan

Combination	N	Subset		
		1	2	3
Powder100	2	.88650		
Powder75	2	.88950		
Puree50	2	.89750	.89750	
Puree100	2	.90250	.90250	
Puree75	2	.91800	.91800	.91800
Puree25	2		.92700	.92700
Powder25	2		.93100	.93100
Powder50	2			.94250
Sig.		.087	.072	.163

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .000.

a. Uses Harmonic Mean Sample Size = 2.000.

b. Alpha = 0.05.

F-25

Table F6. Cohesiveness of sponge cake

(a) Control

Form of cauliflower	Replication	Cauliflower concentration (%)		
		0	Average	Average ± SD
Puree	1	0.745		
		0.732	0.738	
		0.737		0.761 ± 0.03
	2	0.777		
		0.792	0.783	
		0.781		
Powder	1	0.745		
		0.732	0.738	
		0.737		0.761 ± 0.03
	2	0.777		
		0.792	0.783	
		0.781		

(b) Treatment

Form of cauliflower	Replication	Cauliflower concentration (%)								
		25		50		75		Value	Average	Average ± SD
		Value	Average	Value	Average	Value	Average			
Puree	1	0.812		0.742		0.765		0.812	0.805	0.789 ± 0.05
		0.855	0.805	0.739	0.740	0.821	0.793			
		0.747		0.740		0.793		0.736	0.774	0.750 ± 0.04
	2	0.761	0.747	0.818	0.759	0.772	0.793 ± 0.02			
		0.736	0.774	0.718	0.759	0.808	0.793	0.825	0.742	0.798
		0.825		0.742		0.798				
Powder	1	0.788		0.860		0.743		0.760	0.805	0.798 ± 0.04
		0.760	0.805	0.808	0.853	0.848	0.763			
		0.867		0.890		0.699		0.766	0.790	0.815 ± 0.05
	2	0.766	0.790	0.772	0.777	0.754	0.773 ± 0.08			
		0.790		0.770		0.889	0.782	0.814	0.788	0.704
		0.814		0.788		0.704				

Treatment (continued)

Form of cauliflower	Replication	Cauliflower concentration (%)		
		100 Value	Average	Average ± SD
Puree	1	0.777		
		0.796	0.790	
		0.798		0.806 ± 0.04
	2	0.780		
		0.885	0.822	
		0.802		
Powder	1	0.784		
		0.786	0.814	
		0.871		0.839 ± 0.04
	2	0.871		
		0.861	0.865	
		0.863		

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Cohesiveness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.010 ^a	7	.001	2.069	.165
Intercept	10.120	1	10.120	14318.297	.000
Form	.002	1	.002	2.646	.142
Concentration	.004	3	.001	2.046	.186
Form * Concentration	.004	3	.001	1.899	.208
Error	.006	8	.001		
Total	10.136	16			
Corrected Total	.016	15			

a. R Squared = .644 (Adjusted R Squared = .333)

Table F7. Chewiness of Sponge Cake

(a) Control

Form of cauliflower	Replication	Cauliflower concentration (%)		
		0	Average	Average ± SD
		Value	Average	Average ± SD
Puree	1	182.087		
		172.673	173.294	
	2	165.122		165.382 ± 11.19
		173.542		
Powder	1	155.933	157.469	
		142.933		
	1	182.087	173.294	

F-30

(b) Treatment

Form of cauliflower	Replication	Cauliflower concentration (%)								
		25			50			75		
		Value	Average	Average ± SD	Value	Average	Average ± SD	Value	Average	Average ± SD
Puree	1	183.282			161.891			152.107		
		168.368	163.284		139.150	145.837		179.390	177.072	
		138.202		158.249 ± 26.55	136.469		149.238 ± 9.60	199.718		177.685 ± 17.71
	2	115.952			152.049			173.613		
		161.000	153.213		152.237	152.639		194.618	178.298	
Powder	1	182.687			153.630			166.663		
		169.310	187.709	185.718 ± 24.54	188.036	175.410	174.470 ± 39.27	145.311	163.277	167.947 ± 22.26
		169.572			110.594			188.958		

		172.673	
		165.122	
		173.542	165.382 ± 11.19
2		155.933	157.469
		142.933	

		224.246		227.599		155.562	
		169.674		163.707		158.959	
2		209.299	183.727	162.986	173.530	202.082	172.618
		172.209		193.896		156.812	

F31

Treatment (continued)

Form of cauliflower	Replication	Cauliflower concentration (%)		
		100		
		Value	Average	Average ± SD
Puree	1	152.080		
		156.378	165.637	
		188.454		168.279 ± 15.98
	2	156.825		
		186.526	170.921	
Powder	1	169.411		
		176.926		197.186 ± 10.25
		200.621	191.408	

		196.678
		202.739
2	204.150	202.963
		202.000

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Chewiness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3200.234 ^a	7	457.176	17.461	.000
Intercept	475321.653	1	475321.653	18154.529	.000
Form	1294.938	1	1294.938	49.459	.000
Concentration	873.098	3	291.033	11.116	.003
Form * Concentration	1032.198	3	344.066	13.141	.002
Error	209.456	8	26.182		
Total	478731.343	16			
Corrected Total	3409.690	15			

a. R Squared = .939 (Adjusted R Squared = .885)

F-32

2. Duncan

Chewiness

Duncan

Combination	N	Subset				
		1	2	3	4	5
Puree50	2	149.23800				
Puree25	2	158.24850	158.24850			
Powder75	2		167.94750	167.94750		
Puree100	2		168.27900	168.27900		
Powder50	2			174.47000	174.47000	
Puree75	2			177.68500	177.68500	
Powder25	2				185.81800	185.81800

Powder100		2	.116	.097	.112	.066	197.18550
Sig.							.057

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 26.182.

a. Uses Harmonic Mean Sample Size = 2.000.. b. Alpha = 0.05.

F.33

F5. Color Analysis of Sponge Cake

Table F8. L* of crust color of sponge cake

(a) Control

Form of cauliflower	Replication	Cauliflower concentration (%)		
		0		
		Value	Average	Average ± SD
Puree	1	64.95		
		68.45	67.38	
		68.73		66.16 ± 2.69
	2	62.42		
		64.09	64.94	
		68.31		

		64.95									
	1	68.45	67.38								
Powder		68.73		66.16 ±							
		62.42		2.69							
	2	64.09	64.94								
		68.31									

(b) Treatment

Form of cauliflower	Replication	Cauliflower concentration (%)											
		25			50			75			100		
		Value	Average	Average ± SD	Value	Average	Average ± SD	Value	Average	Average ± SD	Value	Average	Average ± SD
Puree	1	62.67			57.63			69.46			69.48		
		64.92	63.77		57.05	59.01		68.78	69.08		65.34	64.55	
		63.71		63.10 ± 1.96	62.35		59.89 ± 2.38	68.99		69.96 ± 1.89	58.83		65.98 ± 3.84
	2	60.34		1.96	60.91		2.38	70.40		1.89	65.87		
		61.53	62.43		58.85	60.76		73.58	70.85		68.52	67.40	
		65.41			62.53			68.57			67.81		
Powder	1	68.53	70.89	71.08 ± 1.94	74.05	73.86	75.10 ± 3.64	69.82	69.34	71.55 ± 2.96	77.91	74.06	71.99 ± 5.13
		71.08			70.48			68.56			75.10		

	73.05		77.05		69.64		69.18
	71.07		79.70		71.72		76.00
2	73.40	71.26	77.69	76.34	76.68	73.77	69.18
	69.32		71.64		72.90		69.91
							64.56

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: L_Crust

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	367.036 ^a	7	52.434	14.160	.001
Intercept	75251.462	1	75251.462	20321.687	.000
Form	237.006	1	237.006	64.004	.000
Concentration	33.290	3	11.097	2.997	.095
Form * Concentration	96.739	3	32.246	8.708	.007
Error	29.624	8	3.703		
Total	75648.122	16			
Corrected Total	396.660	15			

a. R Squared = .925 (Adjusted R Squared = .860)

2. Duncan

L_Crust

Duncan

Combination	N	Subset				
		1	2	3	4	5
Puree50	2	59.8850				
Puree25	2	63.1000	63.1000			
Puree100	2		65.9750			
Puree75	2			69.9650	69.9650	
Powder25	2				71.0750	71.0750
Powder75	2				71.5550	71.5550

Powder100		2			71.9850	71.9850
Powder50		2			75.1000	
Sig.			.133	.174	.072	.351

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 3.703.

a. Uses Harmonic Mean Sample Size = 2.000.

b. Alpha = 0.05.

F-36

Table F9. °Hue value of crust color of sponge cake

(a) Control

Form of cauliflower	Replication	Cauliflower concentration (%)				
		0				
		a*	b*	Value	Average	Average ± SD
Puree	1	19.73	35.93	61.23		
		18.35	37.32	63.82	62.97	
		17.51	35.67	63.85		66.51 ± 4.33
	2	14.99	36.65	67.76		
		14.55	38.94	69.51	70.06	
		12.13	39.44	72.90		
Powder	1	19.73	35.93	61.23	62.97	66.51 ± 4.33
		18.35	37.32	63.82		

	17.51	35.67	63.85	
	14.99	36.65	67.76	
2	14.55	38.94	69.51	70.06
	12.13	39.44	72.90	

(b) Treatment		Cauliflower concentration (%)									
		Form of cauliflower	Replication	25					50		
				a*	b*	Value	Average	Average ± SD	a*	b*	Value
Puree	1	Puree	1	15.63	38.63	67.97			14.53	42.34	71.06
				14.77	43.51	71.25	71.13		14.86	41.85	70.45
				12.69	44.77	74.17		71.27 ± 2.46	12.78	45.33	74.26
	2	Puree	2	15.53	41.56	69.51			14.20	43.99	72.11
				14.70	42.00	70.71	71.41		14.86	41.77	70.42
				12.17	42.51	74.02			12.84	42.79	73.30
Powder	1	Powder	1	8.41	43.00	78.93	81.70	82.43 ± 2.52	4.32	42.76	84.23
				6.48	42.89	81.41			8.36	42.87	78.97

F38

Treatment (continued)

Form of cauliflower	Replication	Cauliflower concentration (%)									
		75					100				
		a*	b*	Value	Average	Average ± SD	a*	b*	Value	Average	Average ± SD
Puree	1	7.58	53.96	82.00			12.65	52.13	76.36		
		8.02	53.16	81.42	81.61		12.14	52.45	76.97	76.60	
		8.03	53.12	81.40		81.67 ± 0.41	12.50	51.99	76.48		76.44 ± 0.29
	2	8.09	53.63	81.42			12.57	51.12	76.19		
		8.11	53.79	81.43	81.74		12.76	52.78	76.41	76.27	
		7.21	53.79	82.37			12.65	51.53	76.21		
Powder	1	9.02	43.17	78.20			3.98	39.62	84.26		
		10.61	42.52	75.99	76.95	79.56 ± 3.45	5.57	43.14	82.64	82.81	83.21 ± 1.33
		10.24	43.24	76.68			6.65	44.64	81.53		

	8.00	43.85	79.66		3.76	42.89	84.99	
2	3.42	41.18	85.25	82.16	4.60	41.49	83.67	83.60
	6.34	42.84	81.58		5.81	42.05	82.13	

E
65

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Hue_Crust

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	323.992 ^a	7	46.285	17.093	.000
Intercept	98811.207	1	98811.207	36491.240	.000
Form	169.846	1	169.846	62.725	.000
Concentration	43.963	3	14.654	5.412	.025
Form * Concentration	110.183	3	36.728	13.564	.002
Error	21.662	8	2.708		
Total	99156.861	16			
Corrected Total	345.654	15			

a. R Squared = .937 (Adjusted R Squared = .882)

2. Duncan

Hue_Crust

Duncan

Combination	N	Subset		
		1	2	3
Puree25	2	71.2700		
Puree50	2	71.9300		
Puree100	2		76.4350	
Powder75	2		79.5550	79.5550
Puree75	2			81.6750
Powder50	2			82.1900
Powder25	2			82.4250
Powder100	2			83.2050
Sig.		.699	.095	.074

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 2.708.

- a. Uses Harmonic Mean Sample Size = 2.000.
- b. Alpha = 0.05.

Table F10. L* of crumb color of sponge cake

(a) Control

Form of cauliflower	Replication	Cauliflower concentration (%)		
		0	Average	Average ± SD
Puree	1	80.84		
		83.99	82.53	
		82.77		82.29 ± 1.48
	2	83.26		
		82.72	82.04	
		80.13		
Powder	1	80.84		
		83.99	82.53	82.29 ± 1.48
		82.77		

F42

(b) Treatment

Form of cauliflower	Replication	Cauliflower concentration (%)											
		25			50			75			100		
			Value	Average	Average \pm SD		Value	Average	Average \pm SD		Value	Average	Average \pm SD
Puree	1	79.17				81.03			80.57			83.98	
		82.20	79.28			80.60	81.43		82.90	81.90		81.91	81.97
		76.46		80.83 \pm 2.61	82.65		80.80 \pm 1.14	82.24		82.40 \pm 1.20	80.02		82.50 \pm 1.38
	2	81.55				80.73		1.14	81.55		1.20	83.04	
		81.80	82.39			79.09	80.18		83.63	82.90		83.09	83.04
		83.82				80.71			83.53			82.98	
Powder	1	81.02				80.07			83.40			82.86	
		80.43	80.93	80.98 \pm 0.63	81.53	81.85	82.26 \pm 0.99	82.71	83.14	83.23 \pm 0.41	83.66	83.00	82.85 \pm 0.87
		81.72				82.22			82.64			83.36	

2	83.26 82.72 80.13	82.04
---	-------------------------	-------

	80.02		83.02		83.18		82.66
2	80.89	81.03	82.22	82.67	83.72	83.32	81.51
	81.47		82.04		83.16		83.93

F-43

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: L_Crumb

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	13.083 ^a	7	1.869	2.108	.159
Intercept	107539.725	1	107539.725	121305.640	.000
Form	1.925	1	1.925	2.172	.179
Concentration	10.137	3	3.379	3.811	.058
Form * Concentration	1.021	3	.340	.384	.768
Error	7.092	8	.887		
Total	107559.900	16			
Corrected Total	20.175	15			

F-44

a. R Squared = .648 (Adjusted R Squared = .341)

Table F11. °Hue value of crumb color of sponge cake

(a) Control

Form of cauliflower	Replication	Cauliflower concentration (%)				
		0		Value	Average	\pm SD
Puree	1	a*	b*			
		-4.42	37.39	96.74		
		-4.60	34.46	97.60	97.13	
	2	-4.45	36.04	97.04		97.08 \pm
		-4.58	35.16	97.42		0.39
	Powder	-4.48	36.08	97.08	97.03	
		-4.34	37.53	96.60		
	1	-4.42	37.39	96.74	97.13	

F-45

(b) Treatment

Form of cauliflower	Replication	Cauliflower concentration (%)									
		25					50				
		a*	b*	Value	Average	Average ± SD	a*	b*	Value	Average	Average ± SD
Puree	1	-3.29	31.74	95.92			-4.67	34.15	97.79		
		-3.52	31.63	96.35	95.58		-4.39	31.32	97.98	98.00	
		-2.61	33.46	94.46		95.97 ± 0.77	-4.46	30.78	98.24		97.86 ± 0.37
	2	-3.43	31.12	96.29		0.77	-4.49	31.23	98.18		
		-3.38	30.85	96.25	96.36		-4.48	35.26	97.24	97.71	
Powder	1	-3.64	31.72	96.55			-4.63	34.19	97.71		
					101.44	101.35		-5.53	30.34	100.33	99.91

Treatment (continued)

Form of cauliflower	Replication	Cauliflower concentration (%)									
		75					100				
		a*	b*	Value	Average	Average ± SD	a*	b*	Value	Average	Average ± SD
Puree	1	-5.55	36.92	98.55			-5.56	36.20	98.73		
		-5.46	35.38	98.77	98.65		-5.10	36.28	98.00	98.25	
		-5.66	37.32	98.62		98.77 ± 0.29	-4.99	35.41	98.02		98.07 ± 0.36
	2	-5.55	36.62	98.62			-5.15	36.15	98.11		
		-5.88	35.74	99.34	98.89		-4.99	35.90	97.91	97.89	
Powder	1	-5.61	36.66	98.70			-4.98	37.02	97.66		
		-4.78	30.38	98.94	98.47	98.06 ± 0.58	-3.50	31.51	96.34	96.56	95.40 ± 1.49
		-4.35	29.56	98.37			-4.07	30.86	97.51		

	-4.25	29.92	98.08		-3.17	31.09	95.82	
2	-3.94	31.06	97.23		-2.14	29.36	94.17	
	-4.28	30.37	98.02	97.65	-1.82	30.61	93.40	94.25
	-4.11	30.46	97.68		-2.74	30.29	95.17	

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Hue_Crumb

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	46.426 ^a	7	6.632	13.965	.001
Intercept	153993.456	1	153993.456	324239.413	.000
Form	3.080	1	3.080	6.485	.034
Concentration	10.329	3	3.443	7.249	.011
Form * Concentration	33.017	3	11.006	23.173	.000
Error	3.799	8	.475		
Total	154043.682	16			
Corrected Total	50.226	15			

a. R Squared = .924 (Adjusted R Squared = .858)

2. Duncan

Hue_Crumb

Duncan

Combination	N	Subset			
		1	2	3	4
Powder100	2	95.4050			
Puree25	2	95.9700			
Puree50	2		97.8550		
Powder75	2		98.0600	98.0600	
Puree100	2		98.0700	98.0700	
Puree75	2		98.7700	98.7700	
Powder50	2			99.7500	99.7500
Powder25	2				100.9600
Sig.		.436	.247	.050	.117

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .475.

a. Uses Harmonic Mean Sample Size = 2.000.. b. Alpha = 0.05.

APPENDIX G. Questionnaire for Sensory Evaluation

G1. Questionnaire for Scoring Test

Scoring Test

Name/Major:

Sample: Cake

Date:

Taste sample from left to right, and determine the intensity each attribute by giving a score between 1 (very not brown/very not yellow/very not dense/very not odd) to 7 (very brown/very yellow/very dense/very odd). Rinse your mouth between samples. Do not re-evaluate or compare samples.

Parameter	Sample code				
Crust color					
Crumb color					
Texture					
Taste					
Aroma					

G2. Questionnaire for Hedonic Test

Hedonic Test

Name/Major:

Sample: Cake

Date:

Taste sample from left to right, and determine the likeness intensity. Rinse your mouth between samples. Do not re-evaluate or compare samples.

Parameter	Sample code				
Crust color					
Crumb color					
Texture					
Taste					
Aroma					
Overall					

Score intensity:

1 = dislike extremely

2 = dislike

3 = dislike moderately

4 = like nor dislike

5 = like moderately

6 = like

7 = like extremely

APPENDIX H. Result of Scoring Test

H1. Scoring of Crust Color

Table H1. Scoring test data for crust color

Number of panelists	Control	Crust color							
		Puree				Powder			
		25%	50%	75%	100%	25%	50%	75%	100%
1	6	6	4	7	5	6	7	7	6
2	4.5	4	3	3	3	5	6	6	6
3	5	3	5	3	5	6	4	7	6
4	4	5	5	6	5	5	3	6	5
5	3	4	5	4	5	4	5	6	5
6	5	4	7	2	7	5	6	7	5
7	3.5	3	7	6	6	4	5	5	5
8	4	5	5	6	5	6	3	7	6
9	5	5	6	2	6	2	2	2	3
10	4	5	5	5	7	3	6	6	5
11	5	4	4	3	7	5	6	7	6
12	5.5	5	4	6	5	5	5	6	5
13	3.5	3	5	5	5	4	5	6	5
14	3.5	4	7	6	6	5	5	7	6
15	5.5	5	6	5	6	5	6	6	6
16	4	3	6	2	6	6	5	7	6
17	3	3	6	5	5	5	6	4	6
18	5	4	5	2	6	5	6	6	6
19	3.5	4	6	6	6	4	2	6	4
20	3.5	4	5	3	5	5	3	7	5
21	5.5	6	6	5	6	5	6	7	7
22	3.5	3	6	6	5	5	6	6	5
23	5	4	6	3	6	5	5	6	5
24	3.5	4	6	5	6	5	6	6	5
25	5.5	3	2	5	4	6	6	6	6
26	2.5	3	5	5	6	3	2	6	3
27	5.5	3	4	1	5	5	6	6	6
28	3.5	2	2	2	2	5	3	6	5
29	4	3	4	4	5	5	2	6	5
30	2.5	4	7	6	7	5	6	7	6
31	5	2	5	1	6	5	4	6	5
32	5.5	5	1	5	5	5	6	7	6
33	4	3	5	5	5	5	6	5	6
34	5.5	4	5	4	5	5	6	6	6
35	4.5	3	7	5	6	5	5	7	6
36	2	1	6	5	5	4	4	5	4
37	5.5	5	6	5	6	4	5	7	6
38	4	4	5	4	5	5	6	6	5
39	5	3	5	2	5	2	2	2	3
40	4	4	6	6	6	5	6	6	6
Average	4.30	3.80	5.13	4.28	5.43	4.73	4.85	6.00	5.33
SD	1.01	1.07	1.38	1.62	0.98	0.93	1.48	1.15	0.92

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Crust_Color

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	148.089 ^a	8	18.511	12.949	.000
Intercept	7307.192	1	7307.192	5111.503	.000
Form * Concentration	52.459	3	17.486	12.232	.000
Form	25.878	1	25.878	18.102	.000
Concentration	55.159	3	18.386	12.862	.000
Error	501.775	351	1.430		
Total	9186.000	360			
Corrected Total	649.864	359			

a. R Squared = .228 (Adjusted R Squared = .210)

2. Duncan

Crust_Color

Duncan

Combination	N	Subset						
		1	2	3	4	5	6	7
Puree25	40	3.800						
Puree75	40	4.275	4.275					
Control	40	4.300	4.300	4.300				
Powder25	40		4.725	4.725	4.725			
Powder50	40			4.850	4.850	4.850		
Puree50	40				5.125	5.125	5.125	
Powder100	40					5.325	5.325	
Puree100	40						5.425	
Powder75	40							6.000
Sig.		.077	.113	.052	.160	.094	.294	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 1.430.

a. Uses Harmonic Mean Sample Size = 40.000.

b. Alpha = .05.

H2. Result of Scoring for Crumb Color

Table H2. Scoring test data for crumb color

Number of panelists	Control	Crumb Color							
		Puree				Powder			
		25%	50%	75%	100%	25%	50%	75%	100%
1	4.5	4	5	4	4	3	6	4	4
2	5.5	5	5	6	4	6	6	6	7
3	3	1	1	1	1	6	6	6	7
4	4	5	5	5	5	5	6	3	7
5	4.5	7	6	6	6	5	5	4	6
6	5	4	4	4	4	6	6	7	6
7	5.5	2	3	1	5	6	6	6	5
8	3	5	5	5	5	1	1	1	3
9	4	6	6	6	6	2	3	2	2
10	5	7	7	7	7	5	5	5	6
11	6.5	7	7	7	7	5	5	6	6
12	6.5	7	6	6	6	6	6	6	5
13	4.5	4	4	4	4	6	5	5	7
14	4	5	5	5	2	3	6	6	3
15	5.5	7	7	7	7	5	5	4	6
16	4.5	6	6	6	6	5	5	4	7
17	5	5	5	5	5	4	5	3	5
18	2.5	1	1	1	1	4	4	4	4
19	4	4	4	4	4	2	3	4	6
20	5	5	5	4	4	5	5	6	2
21	5.5	6	6	6	6	7	6	6	7
22	5.5	6	5	6	6	5	5	5	7
23	4	3	3	3	3	6	6	5	6
24	4	5	4	3	3	4	4	4	4
25	4.5	7	7	7	7	6	6	6	7
26	2.5	3	3	2	2	5	5	4	7
27	2.5	1	1	2	1	4	3	4	5
28	5	3	3	4	4	6	6	5	3
29	3.5	2	3	2	2	5	6	6	7
30	4.5	4	4	4	4	6	6	5	2
31	4	6	4	4	4	5	5	4	6
32	5.5	6	6	6	5	6	6	6	4
33	3.5	5	5	5	5	3	3	3	3
34	4.5	5	5	4	5	5	3	5	4
35	5	6	6	6	6	6	5	6	7
36	5.5	5	5	5	5	6	6	6	6
37	6	7	7	7	7	5	4	5	6
38	4.5	3	4	3	3	5	6	5	6
39	4.5	5	5	5	4	4	4	6	4
40	4	4	4	4	4	4	4	5	5
Average	4.51	4.73	4.68	4.55	4.48	4.83	4.95	4.83	5.25
SD	1.00	1.75	1.59	1.74	1.71	1.32	1.22	1.28	1.61

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Crumb_Color

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	19.175 ^a	8	2.397	1.077	.378
Intercept	7086.486	1	7086.486	3185.575	.000
Form * Concentration	5.084	3	1.695	.762	.516
Form	10.153	1	10.153	4.564	.033
Concentration	1.309	3	.436	.196	.899
Error	780.819	351	2.225		
Total	8936.750	360			
Corrected Total	799.994	359			

a. R Squared = .024 (Adjusted R Squared = .002)

H3. Result of Scoring for Texture

Table H3. Scoring test data for texture

Number of panelists	Control	Texture							
		Puree				Powder			
		25%	50%	75%	100%	25%	50%	75%	100%
1	4.5	5	3	6	4	6	3	5	7
2	5	6	4	6	4	5	5	5	6
3	2.5	2	4	3	5	7	5	3	6
4	5	4	3	4	7	5	5	3	7
5	5	3	5	6	4	5	6	5	6
6	5.5	3	3	5	3	6	7	7	7
7	6.5	5	6	6	4	6	6	6	6
8	3.5	5	6	6	3	6	7	3	3
9	5.5	5	2	3	5	2	4	3	6
10	5	5	6	5	5	6	5	3	7
11	5.5	3	3	3	3	7	6	5	4
12	6.5	6	5	5	6	5	6	3	5
13	2.5	3	4	5	4	6	2	6	5
14	3.5	4	3	4	2	6	6	5	7
15	4.5	2	2	5	4	4	4	5	6
16	4.5	4	3	3	3	5	6	5	7
17	4.5	4	5	4	4	5	5	2	7
18	4	5	6	5	4	4	4	4	5
19	4.5	4	4	4	5	4	4	4	4
20	3.5	4	4	4	6	5	5	5	6
21	4.5	4	3	4	3	5	6	5	7
22	5.5	4	6	7	5	5	3	2	7
23	5	4	4	4	4	6	6	6	7
24	6	4	3	5	5	3	5	7	7
25	6	5	2	4	7	5	5	5	6
26	4	3	3	3	3	5	5	3	1
27	5.5	4	4	6	6	6	6	5	4
28	3.5	2	5	3	4	3	4	4	7
29	6	1	4	3	4	3	6	6	7
30	4	3	6	7	6	5	6	2	7
31	4.5	5	5	5	5	4	4	5	6
32	5	3	5	7	5	5	5	2	7
33	4.5	2	2	3	2	3	3	3	3
34	5.5	5	4	5	4	2	2	5	5
35	3.5	4	3	3	4	6	6	6	7
36	6	2	5	6	5	4	4	4	4
37	6	4	4	5	5	4	4	4	7
38	2.5	4	3	2	5	6	6	6	7
39	5	2	3	6	4	6	2	4	4
40	4	4	4	4	5	6	6	3	6
Average	4.51	3.78	3.98	4.60	4.40	4.93	4.88	4.35	5.83
SD	1.00	1.19	1.23	1.32	1.17	1.25	1.32	1.39	1.47

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Texture

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	114.622 ^a	8	14.328	8.876	.000
Intercept	6767.093	1	6767.093	4192.295	.000
Form * Concentration	32.509	3	10.836	6.713	.000
Form	52.003	1	52.003	32.217	.000
Concentration	29.684	3	9.895	6.130	.000
Error	566.575	351	1.614		
Total	8308.000	360			
Corrected Total	681.197	359			

a. R Squared = .168 (Adjusted R Squared = .149)

2. Duncan

Texture

Duncan

Combination	N	Subset			
		1	2	3	4
Puree25	40	3.775			
Puree50	40	3.975	3.975		
Powder75	40	4.350	4.350	4.350	
Puree100	40		4.400	4.400	
Puree75	40			4.600	
Control	40			4.700	
Powder50	40			4.875	
Powder25	40			4.925	
Powder100	40				5.825
Sig.		.056	.160	.077	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 1.614.

a. Uses Harmonic Mean Sample Size = 40.000.

b. Alpha = .05.

H4. Result of Scoring for Taste

Table H4. Scoring test data for taste

Number of panelists	Control	Taste							
		Puree				Powder			
		25%	50%	75%	100%	25%	50%	75%	100%
1	3.5	5	6	5	4	3	4	3	2
2	3	5	4	4	5	2	2	3	3
3	1.5	2	3	1	6	1	1	1	1
4	3.5	1	1	1	2	3	5	3	4
5	2	5	1	1	5	2	2	4	3
6	1.5	3	1	5	2	2	2	2	2
7	1.5	1	2	5	1	1	1	3	2
8	4	4	2	2	1	5	4	6	5
9	2.5	3	5	4	4	3	4	4	5
10	1.5	2	1	1	2	2	2	2	5
11	1.5	1	1	1	1	1	1	5	1
12	2.5	2	2	2	2	3	2	2	2
13	2.5	3	4	3	3	2	2	5	2
14	4.5	2	4	4	4	1	1	6	1
15	3	1	1	2	1	4	4	5	4
16	1.5	2	2	2	2	2	4	1	2
17	3	1	3	1	2	5	3	6	4
18	3	1	2	1	2	4	4	4	4
19	3	1	1	1	2	5	4	4	4
20	3.5	5	3	2	3	7	6	2	5
21	4	2	3	3	2	4	2	2	6
22	5	2	6	6	3	5	6	4	7
23	3	3	2	3	5	2	2	5	2
24	1.5	5	3	2	1	2	2	2	2
25	3.5	2	4	1	2	4	3	4	4
26	4.5	4	3	2	4	2	2	4	3
27	3.5	1	1	1	1	5	5	4	4
28	3.5	4	3	4	5	4	5	5	4
29	4.5	2	5	2	2	5	2	2	2
30	2	4	1	5	1	5	2	5	3
31	2	1	1	1	1	5	4	4	4
32	3.5	3	2	3	1	5	5	2	2
33	3.5	2	3	3	2	1	2	2	2
34	2.5	3	5	4	3	3	2	2	4
35	5.5	5	4	5	4	4	5	5	5
36	1	7	1	1	2	1	1	1	1
37	3	2	2	1	2	2	2	2	3
38	2.5	2	3	4	2	3	2	3	5
39	3.5	2	2	2	3	4	4	5	4
40	1.5	1	1	1	2	5	6	4	6
Average	2.90	2.68	2.60	2.55	2.55	3.23	3.05	3.45	3.35
SD	1.10	1.54	1.48	1.54	1.38	1.56	1.54	1.47	1.53

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Taste

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	40.472 ^a	8	5.059	2.358	.018
Intercept	2716.503	1	2716.503	1266.006	.000
Form * Concentration	2.650	3	.883	.412	.745
Form	36.450	1	36.450	16.987	.000
Concentration	1.337	3	.446	.208	.891
Error	753.150	351	2.146		
Total	3879.500	360			
Corrected Total	793.622	359			

a. R Squared = .051 (Adjusted R Squared = .029)

H5. Result of Scoring for Aroma

Table H5. Scoring test data for aroma

Number of panelists	Control	Aroma								
		Puree				Powder				
		25%	50%	75%	100%	25%	50%	75%	100%	
1	2.5	3	5	3	3	4	4	3	4	
2	3	4	4	4	5	2	2	2	2	
3	1.5	2	3	1	6	1	1	1	1	
4	3.5	1	1	1	1	3	2	3	5	
5	1	1	1	1	5	3	3	3	3	
6	1.5	3	1	3	3	1	2	2	2	
7	2	2	6	6	2	1	1	1	1	
8	3	2	2	3	2	4	4	4	4	
9	3	2	2	2	2	4	3	3	4	
10	1.5	3	1	1	2	2	2	2	2	
11	2	1	1	1	1	2	1	5	2	
12	2.5	1	1	1	1	4	4	4	4	
13	2	2	3	2	3	5	5	2	2	
14	5	2	4	2	5	1	1	5	1	
15	1.5	2	4	5	3	2	5	3	2	
16	1.5	2	2	2	2	1	1	1	1	
17	3	3	3	1	3	4	3	6	4	
18	2.5	1	2	1	2	4	4	4	4	
19	2.5	1	1	1	1	4	4	4	4	
20	4.5	6	6	6	4	6	6	3	5	
21	2	1	2	2	1	6	2	2	2	
22	3	1	2	2	1	3	4	4	4	
23	2.5	3	3	3	3	2	2	5	2	
24	1	1	1	4	1	1	1	1	1	
25	3	2	2	2	1	4	3	4	4	
26	4.5	2	2	6	3	2	2	4	2	
27	3.5	1	1	1	3	6	5	5	6	
28	3.5	3	3	3	5	3	5	5	3	
29	2.5	3	4	3	3	1	2	2	2	
30	3	5	1	4	1	2	2	5	5	
31	1.5	1	1	1	1	4	4	4	2	
32	2	3	2	2	2	5	3	2	2	
33	2	2	3	3	3	2	2	2	2	
34	2.5	5	6	5	4	3	3	2	4	
35	2	3	3	2	3	3	2	3	2	
36	1	1	1	2	2	1	1	1	1	
37	3.5	1	2	2	2	2	2	2	3	
38	2.5	2	4	4	3	3	5	4	3	
39	3	1	2	2	2	4	4	4	4	
40	2.5	1	1	1	1	4	3	4	4	
Average		2.51	2.15	2.48	2.53	2.53	2.98	2.88	3.15	2.88
SD		0.94	1.25	1.50	1.52	1.36	1.49	1.40	1.37	1.34

1. Univariate Analysis of Aroma

Tests of Between-Subjects Effects

Dependent Variable: Aroma

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	31.306 ^a	8	3.913	2.105	.035
Intercept	2235.705	1	2235.705	1202.482	.000
Form * Concentration	2.875	3	.958	.515	.672
Form	24.200	1	24.200	13.016	.000
Concentration	3.062	3	1.021	.549	.649
Error	652.594	351	1.859		
Total	3257.250	360			
Corrected Total	683.899	359			

a. R Squared = .046 (Adjusted R Squared = .024)

APPENDIX I. Result of Hedonic Test

I1. Result of Hedonic of Crust Color

Table I1. Hedonic test data for crust color

Number of panelists	Control	Crust color							
		Puree				Powder			
		25%	50%	75%	100%	25%	50%	75%	100%
1	4.5	5	2	7	5	3	5	3	3
2	5	4	4	4	4	6	6	6	6
3	6.5	7	7	6	5	5	6	6	5
4	5.5	6	6	6	6	6	5	4	6
5	4	3	6	7	3	6	6	6	6
6	6.5	4	2	6	6	4	5	5	4
7	4.5	6	6	6	5	5	6	6	6
8	5.5	6	6	6	6	5	3	5	4
9	5.5	6	6	6	6	3	3	4	4
10	6	7	7	7	7	5	5	5	6
11	4.5	6	5	7	6	5	6	6	7
12	6	6	7	6	6	5	5	6	5
13	5	4	4	4	4	6	6	3	6
14	5	6	4	3	3	6	5	5	6
15	6	7	7	7	7	6	4	3	3
16	3.5	5	5	6	6	4	2	6	4
17	4.5	7	7	7	7	5	6	3	6
18	5	4	3	5	5	5	6	6	6
19	5	6	7	7	7	5	4	6	5
20	4.5	4	2	6	6	5	4	6	4
21	6.5	6	5	6	6	6	2	1	2
22	6.5	6	5	5	3	6	4	2	3
23	6	5	5	5	6	6	6	6	6
24	5	6	6	5	6	6	7	5	7
25	4.5	7	1	7	6	6	6	6	6
26	4.5	4	5	4	4	5	5	6	6
27	6.5	3	2	7	6	4	6	4	7
28	4	5	5	5	5	4	2	3	4
29	4.5	5	7	7	4	6	6	6	6
30	2.5	4	6	7	7	3	6	7	6
31	4.5	6	6	5	4	5	5	4	5
32	6	6	6	3	6	5	6	5	6
33	5.5	5	6	6	6	6	6	6	6
34	5.5	6	6	6	6	5	5	4	5
35	6	2	4	6	6	5	5	4	5
36	4	4	7	7	6	5	5	4	5
37	6	6	5	5	6	5	6	6	6
38	5	6	6	5	5	4	6	6	4
39	4	6	6	6	5	2	2	2	6
40	4.5	6	7	7	7	4	6	4	4
Average	5.10	5.33	5.23	5.83	5.50	4.95	5.00	4.78	5.18
SD	0.94	1.23	1.66	1.13	1.13	1.01	1.34	1.44	1.22

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Crust_Color

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	31.600 ^a	8	3.950	2.529	.011
Intercept	8571.587	1	8571.587	5487.442	.000
Form * Concentration	8.484	3	2.828	1.811	.145
Form	19.503	1	19.503	12.486	.000
Concentration	3.084	3	1.028	.658	.578
Error	548.275	351	1.562		
Total	10345.500	360			
Corrected Total	579.875	359			

a. R Squared = .054 (Adjusted R Squared = .033)

I2. Result of Hedonic of Crumb Color

Table I2. Hedonic test data for crumb color

Number of panelists	Control	Crumb color							
		Puree				Powder			
		25%	50%	75%	100%	25%	50%	75%	100%
1	6	5	5	5	5	3	7	4	4
2	5.5	5	4	4	5	6	6	6	6
3	6.5	7	7	6	6	6	6	6	5
4	5.5	6	6	6	6	5	6	5	3
5	4.5	6	4	5	6	6	5	5	5
6	5.5	4	4	4	4	6	6	6	6
7	5.5	4	4	4	4	5	5	5	4
8	6	6	6	6	6	6	6	6	4
9	5	6	6	6	6	4	4	4	4
10	6.5	7	7	7	7	6	6	6	4
11	4.5	5	5	5	5	4	4	4	5
12	6.5	7	6	6	6	6	6	6	5
13	5	4	4	4	4	4	6	6	4
14	4.5	5	4	5	3	2	6	3	3
15	6.5	7	7	7	7	5	5	6	3
16	5	6	6	6	6	6	4	4	1
17	4.5	7	7	7	7	3	3	5	1
18	5.5	6	5	6	6	5	5	5	5
19	5.5	5	5	5	5	6	6	6	4
20	6.5	4	2	5	4	7	7	7	3
21	6.5	6	6	6	6	4	6	6	3
22	5.5	6	6	6	6	5	5	5	2
23	4.5	3	3	3	3	6	6	6	6
24	6	4	5	4	5	7	7	7	7
25	4	4	4	4	4	6	6	6	5
26	5	4	5	4	4	6	6	6	3
27	5.5	6	6	6	6	4	4	5	6
28	5.5	5	5	7	6	5	5	4	3
29	5.5	5	6	5	5	6	6	6	6
30	5.5	5	5	5	5	6	6	3	2
31	5	6	6	6	6	5	5	4	5
32	5.5	7	7	7	6	7	6	6	5
33	5	6	6	6	6	4	4	4	4
34	5	6	6	6	6	4	4	5	4
35	6	6	6	6	6	6	6	6	6
36	5.5	7	7	7	7	4	4	4	4
37	6	6	6	6	6	6	6	6	6
38	6	4	5	4	4	6	4	7	3
39	5	6	5	6	5	4	4	4	3
40	5.5	5	5	5	5	4	6	4	3
Average	5.46	5.48	5.35	5.45	5.38	5.15	5.38	5.23	4.13
SD	0.65	1.09	1.17	1.06	1.05	1.19	1.00	1.07	1.44

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Crumb_Color

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	57.825 ^a	8	7.228	6.000	.000
Intercept	8762.946	1	8762.946	7273.637	.000
Form * Concentration	18.634	3	6.211	5.156	.002
Form	15.753	1	15.753	13.076	.000
Concentration	20.809	3	6.936	5.758	.001
Error	422.869	351	1.205		
Total	10293.250	360			
Corrected Total	480.694	359			

a. R Squared = .120 (Adjusted R Squared = .100)

2. Duncan

Crumb_Color

Duncan

Combination	N	Subset	
		1	2
Powder100	40	4.125	
Powder25	40		5.150
Powder75	40		5.225
Puree50	40		5.350
Puree100	40		5.375
Powder50	40		5.375
Puree75	40		5.450
Control	40		5.463
Puree25	40		5.475
Sig.		1.000	.270

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 1.205.

a. Uses Harmonic Mean Sample Size = 40.000.

b. Alpha = 0.05.

I3. Result of Hedonic of Texture

Table I3. Hedonic test data for texture

Number of panelists	Control	Texture							
		Puree				Powder			
		25%	50%	75%	100%	25%	50%	75%	100%
1	5	5	7	6	5	3	3	4	3
2	4.5	4	5	3	5	6	6	5	5
3	6	6	6	5	4	2	5	7	3
4	4.5	6	6	6	2	5	5	6	4
5	4	7	3	3	6	5	5	5	4
6	6	5	7	6	5	7	6	7	6
7	3	7	4	3	5	4	4	4	4
8	5.5	6	5	5	6	5	4	4	4
9	3.5	5	5	5	5	5	4	5	5
10	6	6	6	7	6	5	5	6	4
11	3	5	5	5	5	4	5	6	6
12	5.5	7	7	7	7	5	4	6	4
13	4.5	5	4	3	4	5	6	5	5
14	4	4	4	4	3	2	2	7	3
15	4.5	7	7	6	6	4	4	4	4
16	5	4	4	3	4	2	4	5	1
17	3.5	4	2	4	4	6	5	4	1
18	5	5	5	5	4	5	5	5	5
19	5	5	5	5	4	6	5	5	4
20	5	4	3	3	2	7	7	6	6
21	5.5	6	5	6	5	4	6	3	5
22	3.5	4	5	4	4	4	5	4	1
23	5	4	4	4	4	6	6	6	5
24	3.5	4	4	5	5	6	5	7	4
25	3.5	6	6	5	4	5	6	6	5
26	4.5	5	4	5	4	4	4	4	2
27	5.5	6	6	6	6	5	5	4	4
28	5.5	5	5	6	6	3	6	4	2
29	4.5	7	3	6	3	6	6	6	6
30	6	3	5	6	5	3	2	6	2
31	5.5	5	5	6	6	4	4	4	4
32	4.5	5	6	2	6	4	4	5	3
33	4.5	5	5	5	6	5	5	5	5
34	5	5	6	6	6	5	5	5	3
35	5	4	4	5	3	5	5	5	4
36	3.5	7	4	5	4	4	4	4	4
37	4	5	7	6	6	6	6	6	3
38	6	4	5	6	4	3	2	3	2
39	5	6	6	4	5	6	2	4	4
40	5	5	5	5	4	3	3	6	2
Average	4.70	5.20	5.00	4.93	4.70	4.60	4.63	5.08	3.78
SD	0.87	1.07	1.22	1.23	1.18	1.30	1.25	1.10	1.39

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Texture

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	55.700 ^a	8	6.962	4.950	.000
Intercept	7104.648	1	7104.648	5051.107	.000
Form * Concentration	12.262	3	4.087	2.906	.035
Form	15.312	1	15.312	10.887	.001
Concentration	28.075	3	9.358	6.653	.000
Error	493.700	351	1.407		
Total	8615.000	360			
Corrected Total	549.400	359			

a. R Squared = .101 (Adjusted R Squared = .081)

2. Duncan

Texture

Duncan

Combination	N	Subset	
		1	2
Powder100	40	3.775	
Powder25	40		4.600
Powder50	40		4.625
Puree100	40		4.700
Control	40		4.700
Puree75	40		4.925
Puree50	40		5.000
Powder75	40		5.075
Puree25	40		5.200
Sig.		1.000	.053

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 1.407.

a. Uses Harmonic Mean Sample Size = 40.000.

b. Alpha = 0.05.

I4. Result of Hedonic of Taste

Table I4. Hedonic test data for taste

Number of panelists	Control	Taste							
		Puree				Powder			
		25%	50%	75%	100%	25%	50%	75%	100%
1	4.5	7	6	5	7	4	5	5	2
2	5	4	5	4	5	6	6	5	5
3	6	6	5	6	3	7	7	7	7
4	5	6	6	6	6	5	4	6	5
5	6	4	6	6	3	6	4	4	4
6	6	6	7	6	4	6	6	6	6
7	6.5	7	5	3	7	7	6	5	6
8	4.5	5	6	6	6	6	6	4	4
9	4.5	3	3	4	2	5	4	4	4
10	6	6	7	7	6	7	6	7	4
11	4.5	4	4	4	5	7	7	5	7
12	5.5	6	6	6	6	6	5	6	6
13	5	5	4	5	5	5	6	5	5
14	5	3	5	5	3	6	7	2	6
15	6	7	7	7	7	6	6	4	4
16	6	5	5	5	5	6	4	6	5
17	3.5	5	4	4	4	3	5	2	4
18	5	6	6	7	5	5	5	5	5
19	6	6	6	6	6	6	4	4	5
20	4.5	2	2	5	5	2	3	7	6
21	5	6	5	5	6	4	5	7	3
22	4.5	6	4	5	6	3	2	5	2
23	4.5	5	5	5	5	6	6	4	6
24	5.5	2	3	5	5	6	6	7	6
25	4.5	6	6	5	7	5	6	5	5
26	5.5	6	5	5	5	6	3	3	3
27	5.5	5	7	6	6	6	6	6	4
28	4.5	4	5	4	4	4	3	3	4
29	5.5	6	4	6	6	6	6	6	6
30	6	5	6	4	4	6	2	2	5
31	6	7	5	6	7	3	4	4	4
32	4.5	5	6	5	7	3	5	6	5
33	5.5	5	5	4	6	6	6	6	6
34	6	6	6	6	6	4	4	6	4
35	4	5	5	5	3	6	6	4	4
36	7	7	6	6	6	7	7	7	7
37	5.5	5	6	6	7	6	6	6	4
38	6	6	4	5	6	6	6	5	5
39	4	5	5	5	4	4	6	2	4
40	6	6	6	6	6	4	5	6	4
Average	5.26	5.28	5.23	5.28	5.30	5.30	5.15	4.98	4.78
SD	0.78	1.26	1.14	0.93	1.32	1.30	1.33	1.49	1.23

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Taste

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	10.475 ^a	8	1.309	.883	.531
Intercept	8533.038	1	8533.038	5751.298	.000
Form * Concentration	3.609	3	1.203	.811	.488
Form	3.828	1	3.828	2.580	.109
Concentration	2.659	3	.886	.597	.617
Error	520.769	351	1.484		
Total	10156.750	360			
Corrected Total	531.244	359			

a. R Squared = .020 (Adjusted R Squared = -.003)

I5. Result of Hedonic of Aroma

Table I5. Hedonic test data for aroma

Number of panelists	Control	Aroma							
		Puree				Powder			
		25%	50%	75%	100%	25%	50%	75%	100%
1	5.5	6	6	5	6	3	5	3	4
2	4.5	4	5	4	4	6	6	5	6
3	6	6	5	6	3	7	7	7	7
4	5.5	6	6	6	6	6	6	6	5
5	6.5	4	6	6	4	5	4	4	4
6	6.5	5	7	6	4	6	6	6	7
7	5.5	7	3	2	7	5	5	5	5
8	5	6	6	6	6	4	4	4	4
9	4.5	5	4	5	5	4	4	4	4
10	6	6	7	7	6	7	6	7	4
11	5.5	6	6	6	6	6	6	4	6
12	6	7	6	7	7	5	5	5	5
13	5.5	5	5	5	5	5	5	6	6
14	4	4	4	5	2	7	7	2	3
15	5.5	7	6	6	7	4	4	4	4
16	6	5	5	5	5	4	6	4	4
17	3.5	3	2	5	2	4	6	2	4
18	5.5	6	5	6	6	5	5	5	5
19	4.5	6	6	6	6	6	4	4	5
20	4.5	3	2	2	5	3	3	7	5
21	6	6	5	5	6	4	6	6	6
22	4.5	6	6	6	6	4	4	4	4
23	5.5	5	5	5	5	6	6	4	6
24	4.5	4	4	4	4	5	5	5	5
25	4	4	4	4	5	5	6	5	5
26	5.5	5	5	4	5	5	3	4	3
27	5.5	5	4	6	5	6	6	5	5
28	5	5	5	6	5	4	3	3	3
29	5.5	6	3	5	5	6	6	6	6
30	5	4	6	4	4	4	4	4	2
31	5.5	5	5	5	5	5	5	5	5
32	5.5	5	6	6	6	4	4	6	5
33	5.5	6	5	5	6	6	6	6	6
34	5.5	5	4	5	5	4	5	5	5
35	5	6	4	6	6	6	6	6	6
36	5.5	7	6	6	6	4	4	4	4
37	5	5	7	6	5	6	6	6	4
38	6	6	5	5	6	6	4	4	6
39	4.5	6	5	5	5	4	4	4	4
40	5	6	6	6	6	4	6	4	4
Average	5.25	5.35	5.05	5.25	5.20	5.00	5.08	4.75	4.78
SD	0.68	1.03	1.22	1.08	1.16	1.09	1.10	1.24	1.12

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Aroma

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	14.172 ^a	8	1.772	1.494	.158
Intercept	8263.012	1	8263.012	6969.403	.000
Form * Concentration	3.262	3	1.087	.917	.433
Form	7.812	1	7.812	6.589	.011
Concentration	1.763	3	.588	.496	.686
Error	416.150	351	1.186		
Total	9712.500	360			
Corrected Total	430.322	359			

a. R Squared = .033 (Adjusted R Squared = .011)

I6. Result of Hedonic of Overall Acceptance

Table I6. Hedonic test data for overall acceptance

Number of panelists	Control	Overall acceptance							
		Puree				Powder			
		25%	50%	75%	100%	25%	50%	75%	100%
1	5	6	6	5	7	3	4	4	3
2	4.5	4	5	4	5	6	6	5	5
3	6	6	6	6	4	5	5	6	5
4	4	6	6	6	3	6	5	6	5
5	6	6	6	5	4	6	5	5	4
6	6.5	5	7	6	5	6	6	6	6
7	6	7	4	2	7	7	6	5	6
8	5	6	6	6	6	6	6	4	4
9	5	5	4	5	4	5	4	4	4
10	6	6	6	7	6	6	6	6	4
11	4.5	5	5	5	6	6	6	5	6
12	5.5	7	6	6	6	5	5	6	5
13	5	5	4	4	4	5	6	5	6
14	5	4	4	5	4	5	6	3	5
15	6	7	7	7	7	5	5	4	4
16	6	5	5	5	5	6	5	6	3
17	3.5	5	3	5	4	4	5	4	2
18	5	6	6	6	5	5	5	5	5
19	5.5	6	6	6	6	6	4	4	5
20	5	3	3	3	4	4	5	6	7
21	5.5	6	5	6	6	5	5	6	2
22	4.5	6	5	5	6	4	3	5	2
23	5.5	5	5	5	5	6	6	5	5
24	5	3	4	5	5	6	6	7	5
25	4	6	7	6	7	5	6	6	5
26	5.5	5	5	5	6	5	4	5	3
27	5.5	6	6	6	6	5	6	5	5
28	4.5	5	5	5	5	4	3	3	2
29	5.5	7	4	7	7	6	6	6	6
30	4	5	6	6	4	5	3	6	5
31	6	6	5	6	7	5	5	4	5
32	5	6	7	5	7	4	5	6	5
33	5.5	6	6	6	6	6	6	6	6
34	6	6	6	6	7	5	5	6	4
35	5	5	5	6	4	6	6	5	5
36	6	7	6	5	6	6	6	6	6
37	6	5	6	6	6	6	6	6	4
38	5.5	5	5	5	5	5	4	5	4
39	4	6	6	5	5	5	6	2	5
40	6	6	6	6	6	4	4	7	3
Average	5.24	5.55	5.38	5.40	5.45	5.25	5.15	5.15	4.53
SD	0.73	0.96	1.03	0.98	1.13	0.84	0.95	1.10	1.26

1. Univariate Analysis of Variance

Tests of Between-Subjects Effects

Dependent Variable: Overall

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	28.439 ^a	8	3.555	3.496	.001
Intercept	8698.478	1	8698.478	8553.633	.000
Form * Concentration	6.725	3	2.242	2.204	.087
Form	14.450	1	14.450	14.209	.000
Concentration	7.263	3	2.421	2.381	.069
Error	356.944	351	1.017		
Total	10239.750	360			
Corrected Total	385.383	359			

a. R Squared = .074 (Adjusted R Squared = .053)

2. Duncan

Overall

Duncan

Combination	N	Subset	
		1	2
Powder100	40	4.525	
Powder50	40		5.150
Powder75	40		5.150
Control	40		5.237
Powder25	40		5.250
Puree50	40		5.375
Puree75	40		5.400
Puree100	40		5.450
Puree25	40		5.550
Sig.		1.000	.135

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 1.017.

a. Uses Harmonic Mean Sample Size = 40.000.

b. Alpha = 0.05.

APPENDIX J. Proximate Analysis of Control and Best Product

J1. Moisture Content of Control and Best Product

Table J1. Moisture content of control sponge cake

Replication	Weight of evaporating dish (g)	Initial weight of sample (g)	Constant weight of sample (g)	Data		
				Moisture content (%)	Average moisture content (%)	Average ± SD
1	38.8986	3.0545	40.7430	39.62	39.30	39.18 ± 0.24
	39.1687	3.0150	41.0050	39.09		
	37.4125	3.0545	39.2700	39.19		
2	39.0798	3.1076	40.9700	39.17	39.05	39.18 ± 0.24
	42.5330	3.0486	44.3906	39.07		
	40.3853	3.0339	42.2385	38.92		

Table J2. Moisture content of best product

Replication	Weight of evaporating dish (g)	Initial weight of sample (g)	Constant weight of sample (g)	Data		
				Moisture content (%)	Average moisture content (%)	Average ± SD
1	41.4527	5.0366	44.3453	42.57	43.80	43.77 ± 1.03
	39.5045	5.0891	42.3321	44.44		
	39.0798	5.0213	41.8721	44.39		
2	42.533	5.0416	45.3402	44.32	43.74	43.77 ± 1.03
	40.3853	5.0557	43.1873	44.58		
	39.5045	5.0363	42.4086	42.34		

Sample Calculation:

$$\begin{aligned} \text{Moisture Content(%)} &= \frac{\text{Initial weight} - \text{final weight}}{\text{Initial weight}} \times 100\% \\ &= \frac{3.0545 - (40.7430 - 38.8986)}{3.0545} \times 100\% \\ &= 39.62\% \end{aligned}$$

J2. Ash Content of Control and Best Product

Table J3. Ash content of control sponge cake

Replication	Weight of crucible (g)	Initial weight of sample (g)	Final weight of crucible + sample (g)	Data		
				Ash content (%)	Average ash content (%)	Average ± SD
1	36.4090	1.8427	36.4294	1.11	1.03	1.04 ± 0.08
	36.1272	1.5269	36.1418	0.96		
	35.7881	1.5978	35.8045	1.03		
2	35.2633	1.5269	35.2798	1.08	1.06	1.04 ± 0.08
	35.7312	2.0051	35.7543	1.15		
	36.4090	2.0099	36.428	0.95		

Table J4. Ash content of best product

Replication	Data					
	Weight of crucible (g)	Initial weight of sample (g)	Final weight of crucible + sample (g)	Ash content (%)	Average ash content (%)	Average ± SD
1	40.4100	3.0991	40.4484	1.24		
	35.2633	3.0702	35.3013	1.24	1.25	
	35.7310	3.0507	35.7694	1.26		1.24 ± 0.02
2	36.1398	3.1358	36.1775	1.20		
	35.0130	3.0347	35.051	1.25	1.24	
	35.5676	3.0278	35.6056	1.26		

Sample Calculation:

$$\begin{aligned}
 \text{Ash Content(%)} &= \frac{\text{Final weight}}{\text{Initial weight}} \times 100\% \\
 &= \frac{(36.4294 - 36.4090)}{1.8427} \times 100\% \\
 &= 1.11\%
 \end{aligned}$$

J3. Protein Content of Control and Best Product

Table J5. Protein content of control sponge cake

Replication	Data						
	Weight of sample (g)	Volume of HCl used to titrate sample (mL)	Volume of HCl used to titrate blank (mL)	Nitrogen content (%)	Protein content (%)	Average protein content (%)	
1	2.0295	9.88	0.4	1.31	7.06		
	2.0683	10.39	0.4	1.35	7.30	7.28	
	2.0278	10.42	0.4	1.38	7.47		7.25 ± 0.16
2	2.9693	14.7	0.22	1.37	7.37		
	2.9749	14.16	0.22	1.31	7.09	7.23	
	3.0154	14.63	0.22	1.34	7.23		

Table J6. Protein content of best product

Replication	Data					
	Weight of sample (g)	Volume of HCl used to titrate sample (mL)	Volume of HCl used to titrate blank (mL)	Nitrogen content (%)	Protein content (%)	Average protein content (%)
1	2.0980	9.69	0.07	1.28	6.93	6.99 ± 0.11
	2.0775	9.64	0.07	1.29	6.97	
	2.0324	9.76	0.07	1.33	7.21	
2	2.0975	9.75	0.07	1.29	6.98	6.94
	2.0267	9.40	0.07	1.29	6.96	
	2.0653	9.48	0.07	1.28	6.89	

Sample Calculation:

$$\begin{aligned}
 \text{Protein Content (\%)} &= \frac{(S - B) \times \text{Normality of HCl} \times 14.007 \times \text{Protein Factor} \times 100\%}{\text{weight of sample (g)} \times 1000} \\
 &= \frac{(9.88 - 0.40) \times 0.2 \text{ N} \times 14.007 \times 5.40}{2.0295 \text{ g} \times 1000} \times 100\% \\
 &= 7.06\%
 \end{aligned}$$

J4. Crude Fat Content of Control and Best Product

Table J7. Crude fat content of control sponge cake

Replication	Data						
	Weight of boiling flask (g)	Initial weight of sample (g)	Constant weight of boiling flask (g)	Fat content (%)	Average fat content (%)	Average ± SD	
1	115.0533	3.0567	115.5382	15.86	15.69	15.70 ± 0.45	
	139.1670	3.0364	139.6503	15.92			
	112.9274	3.0026	113.3867	15.30			
2	115.0533	2.0192	115.3844	16.40	15.71		
	115.0533	3.0345	115.5236	15.50			
	110.5416	2.0260	110.8500	15.22			

Table J8. Crude fat content of best product

Replication	Data						
	Weight of boiling flask (g)	Initial weight of sample (g)	Final weight of boiling flask (g)	Fat content (%)	Average fat content (%)	Average ± SD	
1	115.0533	5.0767	115.3003	4.87	5.20	5.27 ± 0.29	
	139.9480	5.0286	140.2232	5.47			
	115.0533	5.0108	115.3170	5.26			
2	139.1670	5.1683	139.4261	5.01	5.35		
	112.9274	5.1002	113.2030	5.40			
	112.0601	5.0891	112.3462	5.62			

Sample Calculation:

$$\begin{aligned}\text{Crude fat content (\%)} &= \frac{\text{Final Weight}}{\text{Initial Weight}} \times 100\% \\ &= \frac{(115.5382 - 115.0533)}{3.0567} \times 100\% \\ &= 15.86\%\end{aligned}$$

J5. Carbohydrate Content of Control and Best Product

Table J9. Carbohydrate content of control sponge cake

Replication	Data						Average ± SD
	Moisture content (%)	Ash content (%)	Protein content (%)	Crude fat content (%)	Carbohydrate content (%)	Average	
I	39.62	1.11	7.06	15.86	36.35		
	39.09	0.96	7.30	15.92	36.73	36.70	
	39.19	1.03	7.47	15.30	37.02		36.83 ± 0.61
II	39.17	1.08	7.37	16.40	35.97		
	39.07	1.15	7.09	15.50	37.20	36.95	
	38.92	0.95	7.23	15.22	37.69		

Table J10. Carbohydrate content of best product

Replication	Data						Average ± SD
	Moisture content (%)	Ash content (%)	Protein content (%)	Crude fat content (%)	Carbohydrate content (%)	Average	
I	42.57	1.24	6.93	4.87	44.39		
	44.44	1.24	6.97	5.47	41.89	42.72	
	44.39	1.26	7.21	5.26	41.88		42.73 ± 1.14
II	44.32	1.20	6.98	5.01	42.49		
	44.58	1.25	6.96	5.40	41.81	42.73	
	42.34	1.26	6.89	5.62	43.90		

Sample Calculation:

$$\begin{aligned}\text{Carbohydrate content (\%)} &= 100\% - (\% \text{Moisture} + \% \text{Ash} + \% \text{Protein} + \% \text{Crude fat}) \\ &= 100\% - (39.62\% + 1.11\% + 7.06\% + 15.86\%) \\ &= 36.35\%\end{aligned}$$

APPENDIX K. Statistical Analysis of Proximate Analysis of Control and Best Product

K1. T-test of Moisture Content

Summary Data

	N	Mean	Std. Deviation	Std. Error Mean
Control	2.000	39.180	.240	.170
Powder75	2.000	43.770	1.030	.728

Independent Samples Test

	Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
Equal variances assumed	-4.590	.748	-6.138	2.000	.026
Equal variances not assumed	-4.590	.748	-6.138	1.108	.086

Hartley test for equal variance: F = 18.418, Sig. = 0.0515

K2. T-test for Ash Content

Summary Data

	N	Mean	Std. Deviation	Std. Error Mean
Control	2.000	1.040	.080	.057
Powder75	2.000	1.240	.020	.014

Independent Samples Test

	Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
Equal variances assumed	-.200	.058	-3.430	2.000	.075
Equal variances not assumed	-.200	.058	-3.430	1.125	.158

Hartley test for equal variance: F = 16.000, Sig. = 0.0588

K3. T-test for Protein Content

Summary Data

	N	Mean	Std. Deviation	Std. Error Mean
Control	2.000	7.250	.160	.113
Powder75	2.000	6.990	.110	.078

Independent Samples Test

	Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
Equal variances assumed	.260	.137	1.894	2.000	.199
Equal variances not assumed	.260	.137	1.894	1.773	.215

Hartley test for equal variance: F = 2.116, Sig. = 0.3210

K4. T-test for Crude Fat Content

Summary Data

	N	Mean	Std. Deviation	Std. Error Mean
Control	2.000	36.830	.610	.431
Powder75	2.000	42.730	1.140	.806

Independent Samples Test

	Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
Equal variances assumed	-5.900	.914	-6.453	2.000	.023
Equal variances not assumed	-5.900	.914	-6.453	1.529	.043

Hartley test for equal variance: F = 3.493, Sig. = 0.2226

K5. T-test for Carbohydrate Content

Summary Data

	N	Mean	Std. Deviation	Std. Error Mean
Control	2.000	36.830	.610	.431
Powder75	2.000	42.730	1.140	.806

Independent Samples Test

	Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
Equal variances assumed	-5.900	.914	-6.453	2.000	.023
Equal variances not assumed	-5.900	.914	-6.453	1.529	.043

Hartley test for equal variance: F = 3.493, Sig. = 0.2226