

APPENDICES

APPENDIX A

Method of Dietary Fiber Determination (Enzymatic-Gravimetric Method, AOAC, 1990)

Principle:

Dry, fat-extracted, ground food samples are digested with α -amylase, protease and amyloglucosidase to remove starch and protein. Insoluble fiber is collected by filtration. Soluble fiber is precipitated by addition of ethanol to a concentration of 78% and collected by filtration. The fiber residue is washed with ethanol and acetone, oven dried, and weighed. The fiber residue is analyzed for protein and ash content [fiber = residue weight – (weight of protein + weight of ash)].

Reagents:

1. Phosphate buffer
2. Alpha-amylase enzyme
3. 0.275 N NaOH
4. Protease enzyme
5. 0.325 N HCl
6. Amyloglucosidase enzyme
7. 78 and 95% ethanol
8. Acetone

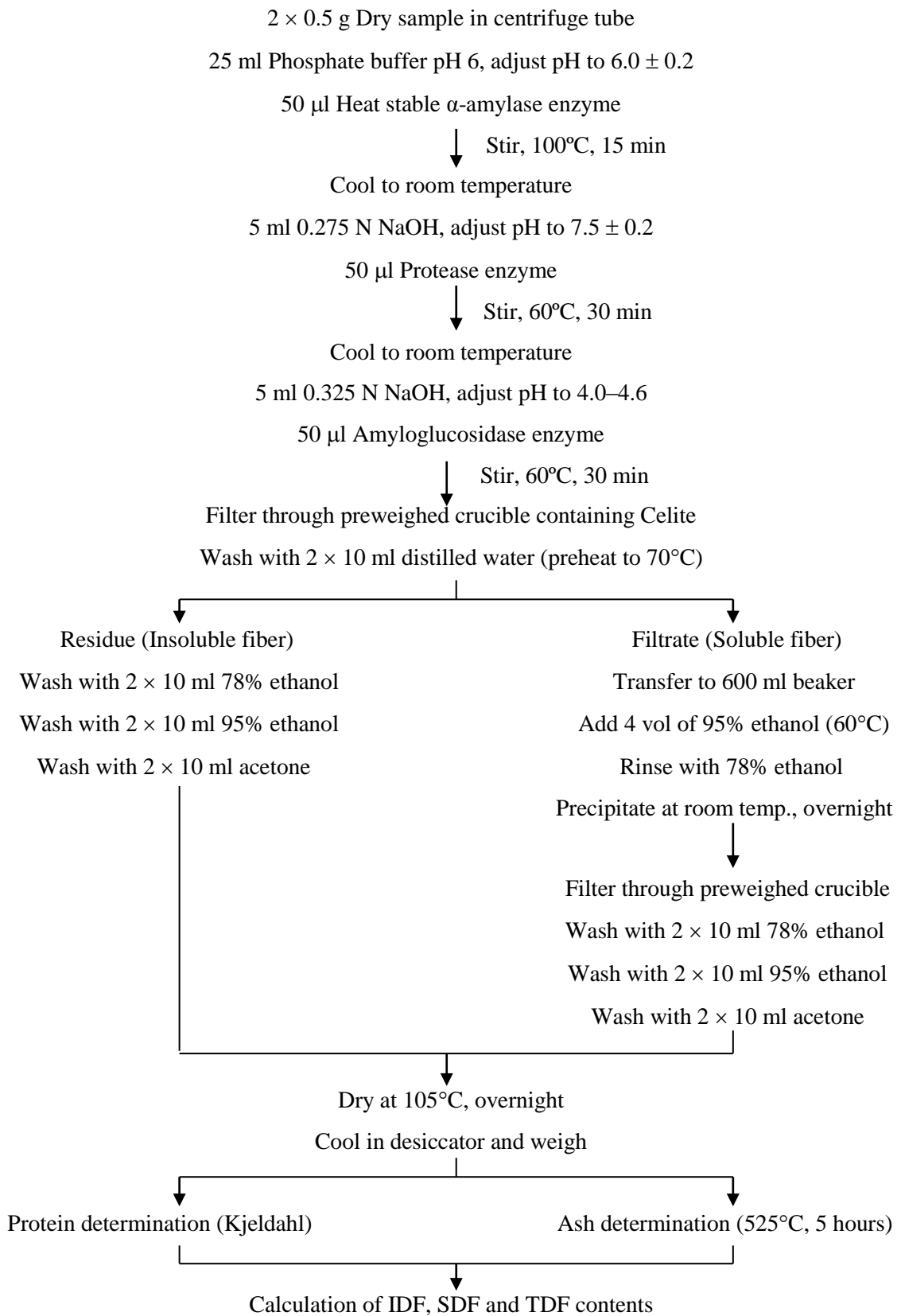


Figure A. Procedure for determination of dietary fiber content

Calculation:

$$DF (\%) = \frac{\text{wt. of sample residue} - \text{wt. of blank residue} - P - A - B}{\text{wt. of sample}} \times 100$$

where P = Weight (mg) of protein

A = Weight (mg) of ash

B = Average of residue weight (mg) for duplicate blank

APPENDIX B
Method of Moisture Determination
(Hot-Air Oven Method, AOAC, 1990)

Principle:

A well ground sample is dried in a hot-air oven, usually to 105°C, until constant weight. Acid washed sand is used for mixing with the wet sample prior to drying. Weight loss due to heating is calculated as the moisture content of the sample.

Procedure:

1. Weigh approximately 10-15 g of acid washed sand into a porcelain dish containing a small glass rod. Dry in a hot-air oven at 105°C for 30 min.
2. Remove the sand dish and cool in a desiccator.
3. Weigh sand dish (= a g) and then add approximately 2-3 g of solid or 5-10 ml of liquid sample. Reweigh (= b g).
4. Mix the sample with sand by using glass rod. If necessary, add sufficient distilled water to disperse the sample thoroughly before warming on a hot water bath.
5. Evaporate off the water as much as possible on the water bath. The sample mix should be stirred frequently until it is near the completion of evaporation.
6. Transfer the sample dish to the hot-air oven, dry at 105°C for 2 hours.
7. Remove the sample dish and cool in the desiccator, and weigh (= c g).
8. Return the sample dish to the oven and dry until a constant weight is obtained. Reweigh after drying every 30 min. The difference should not be more than 5 mg when the residual solid is 2-5 g.

Calculation:

$$\text{Moisture (\%)} = \frac{(b - c) \times 100}{(b - a)}$$

APPENDIX C

Method of Lipid Determination (Soxhlet Extraction Method, AOAC, 960.39)

Principle:

A food sample is hydrolyzed by diluted acid prior to continuous extraction with petroleum ether using Soxhlet apparatus. The residue in the extraction flask after solvent removal represents the crude fat content of the sample.

Reagents:

1. 4 N Hydrochloric acid
2. Petroleum ether

Procedure:

1. Weigh exactly 3-5 g of sample into an Erlenmeyer flask.
2. Add 50 ml of 4 N hydrochloric acid, then mix.
3. Connect to an air condenser and reflux with gentle boiling for 1 hour.
4. Filter and wash with hot water until the filtrate becomes free of acid (using universal indicator).
5. Dry the filter paper containing digested sample in an oven at 105°C for 30 min, then transfer into an extraction thimble.
6. Extraction will be carried out on a Soxtec System Model 2055 with the thimbles immersed in 80 ml petroleum ether for 30 min, then rinsing for 1 hour, and evaporating off solvent for 30 min.
7. Removal of thimbles and extraction cups.
8. Dry the extraction cups in an oven at 105°C until constant weight is obtained.

Calculation:
$$\text{Total fat (g/100g)} = [\text{Weight of fat residue (g)} \times 100] / \text{Weight of sample (g)}$$

APPENDIX D

Amount of Ingredients in the Control and Dietary Fiber from Dried and Fresh Corn Silk-added Cake Formulas

Ingredients (g)	Corn Silk fiber-added cakes		
	0%	10%	15%
Wheat flour (Kilendang [®] , Laemthong Co., Ltd.)	71.05	63.94	60.4
Corn Silk fiber	-	7.15	10.65
Baking powder (Mcgarrett [®] Co., Ltd.)	4.00	4.00	4.00
Shortening (Criscp [®] , The J.M. Smucker Co., Ltd.)	33.33	33.33	33.33
Powdered sugar (Mitr Phol [®] , Mitr Phol Sugar Co., Ltd.)	71.05	71.05	71.05
Salt (Prung Thip [®] , Sahapatthanapibul Ltd.)	0.60	0.60	0.60
Whole egg	33.33	33.33	33.33
Milk	80.00	80.00	80.00
Vanilla Butter	2.00	2.00	2.00

APPENDIX E

Amount of Ingredients in the Control and Dietary Fiber from Dried and Fresh Corn Silk-added Batter-mix for Deep-fried chicken Formulas

Ingredients (%)	DDF and FDF-added chicken pieces	
	0%	3%
All propose flour (Kite®, UFM Food Center Trading Ltd.)	34.72	34.72
Corn Silk fiber	-	3.00
Water	27.25	27.25
2% Calcium hydroxide solution	27.25	27.25
Corn flour (Imperial®, Imperial General Food Ltd.)	3.12	3.12
Paprika (Prung Thip®, Sahapatthanapibul Ltd.)	1.38	1.38
Pepper (Hand brand No.1®, Nguan Soon Co., Ltd.)	1.73	1.73

APPENDIX E

แบบสอบถามการประเมินผลทางประสาทสัมผัส ผลิตภัณฑ์เค้กเสริมใยอาหารจากไหมข้าวโพด

รหัสตัวอย่าง.....

วันที่.....เวลา.....

ผู้ประเมินอายุ.....ปี เพศ (.....) ชาย (.....) หญิง

ตอนที่ 1 เมื่อท่านได้รับผลิตภัณฑ์ อย่าเพิ่งชิม กรุณาให้คะแนนความชอบของท่าน โดยการมอง และขีดเครื่องหมาย ✓ ลงในช่องที่ตรงกับความเห็นของท่านมากที่สุด

1. ความชอบต่อลักษณะโดยลักษณะโดยรวมของเค้ก

.....ชอบมากที่สุด

.....ชอบมาก

.....ชอบปานกลาง

.....ชอบเล็กน้อย

.....เฉย ๆ *

.....ไม่ชอบเล็กน้อย

.....ไม่ชอบปานกลาง

.....ไม่ชอบมาก

.....ไม่ชอบมากที่สุด

ข้อเสนอแนะ.....

.....

2. สีของเค้ก

.....ชอบมากที่สุด

.....ชอบมาก

.....ชอบปานกลาง

.....ชอบเล็กน้อย

.....เฉย ๆ *

.....ไม่ชอบเล็กน้อย

.....ไม่ชอบปานกลาง

.....ไม่ชอบมาก

.....ไม่ชอบมากที่สุด

ข้อเสนอแนะ.....

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* เฉย ๆ หมายถึงความรู้สึกระหว่างชอบและไม่ชอบ

ตอนที่ 2 หลังจากที่ท่าน ได้ชิมเค้กแล้ว กรุณาให้คะแนน โดยการขีดเครื่องหมาย ✓ ลงในช่องที่ตรงกับ
ความเห็นของท่านมากที่สุด

1. ความชอบโดยรวม

.....ชอบมากที่สุด

.....ชอบมาก

.....ชอบปานกลาง

.....ชอบเล็กน้อย

.....เฉย ๆ *

.....ไม่ชอบเล็กน้อย

.....ไม่ชอบปานกลาง

.....ไม่ชอบมาก

ข้อเสนอแนะ.....

.....

3. กลิ่นของเด็ก

.....ชอบมากที่สุด

.....ชอบมาก

.....ชอบปานกลาง

.....ชอบเล็กน้อย

.....เฉย ๆ *

.....ไม่ชอบเล็กน้อย

.....ไม่ชอบปานกลาง

.....ไม่ชอบมาก

.....ไม่ชอบมากที่สุด

ข้อเสนอแนะ.....

.....

3. ลักษณะเนื้อสัมผัสของเด็ก

.....ชอบมากที่สุด

.....ชอบมาก

.....ชอบปานกลาง

.....ชอบเล็กน้อย

.....เฉย ๆ *

.....ไม่ชอบเล็กน้อย

.....ไม่ชอบปานกลาง

.....ไม่ชอบมาก

.....ไม่ชอบมากที่สุด

ข้อเสนอแนะ.....

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4. รสชาติของเด็ก

.....ชอบมากที่สุด

.....ชอบมาก

.....ชอบปานกลาง

.....ชอบเล็กน้อย

.....เฉย ๆ *

.....ไม่ชอบเล็กน้อย

.....ไม่ชอบปานกลาง

.....ไม่ชอบมาก

.....ไม่ชอบมากที่สุด

ข้อเสนอแนะ.....

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APPENDIX F

แบบสอบถามการประเมินผลทางประสาทสัมผัส ผลิตภัณฑ์ไก่ทอดเสริมใยอาหารจากไหมข้าวโพด

รหัสตัวอย่าง.....

วันที่.....เวลา.....

ผู้ประเมินอายุ.....ปี เพศ (.....) ชาย (.....) หญิง

ตอนที่ 1 เมื่อท่านได้รับผลิตภัณฑ์ *อย่างเพิ่งชิม* กรุณาให้คะแนนความชอบของท่าน โดยการมอง และขีดเครื่องหมาย ✓ ลงในช่องที่ตรงกับความเห็นของท่านมากที่สุด

1. ความชอบต่อลักษณะโดยลักษณะโดยรวมเมื่อได้เห็นไก่ทอด

.....ชอบมากที่สุด

.....ชอบมาก

.....ชอบปานกลาง

.....ชอบเล็กน้อย

.....เฉย ๆ *

.....ไม่ชอบเล็กน้อย

.....ไม่ชอบปานกลาง

.....ไม่ชอบมาก

.....ไม่ชอบมากที่สุด

ข้อเสนอแนะ.....

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2. สีของไก่ทอด

.....ชอบมากที่สุด

.....ชอบมาก

.....ชอบปานกลาง

.....เฉย ๆ *

.....ไม่ชอบเล็กน้อย

.....ไม่ชอบปานกลาง

.....ไม่ชอบมาก

.....ไม่ชอบมากที่สุด

ข้อเสนอแนะ.....

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* เฉย ๆ หมายถึงความรู้สึกระหว่างชอบและไม่ชอบ

ตอนที่ 2 หลังจากที่ทำท่าน ได้ชิมไก่ทอดแล้ว กรุณาให้คะแนน โดยการขีดเครื่องหมาย ✓ ลงในช่องที่ตรงกับ
ความเห็นของท่านมากที่สุด

1. ความชอบโดยรวม

.....ชอบมากที่สุด

.....ชอบมาก

.....ชอบปานกลาง

.....ชอบเล็กน้อย

.....เฉย ๆ *

.....ไม่ชอบเล็กน้อย

.....ไม่ชอบปานกลาง

.....ไม่ชอบมาก

.....ไม่ชอบมากที่สุด

ข้อเสนอแนะ.....

.....

* เฉย ๆ หมายถึงความรู้สึกระหว่างชอบและไม่ชอบ

2. กลิ่นของไก่ทอด

.....ชอบมากที่สุด

.....ชอบมาก

.....ชอบปานกลาง

.....ชอบเล็กน้อย

.....เฉย ๆ *

.....ไม่ชอบเล็กน้อย

.....ไม่ชอบปานกลาง

.....ไม่ชอบมาก

.....ไม่ชอบมากที่สุด

ข้อเสนอแนะ.....

.....

3. รสชาติของไก่ทอด

.....ชอบมากที่สุด

.....ชอบมาก

.....ชอบปานกลาง

.....ชอบเล็กน้อย

.....เฉย ๆ *

.....ไม่ชอบเล็กน้อย

.....ไม่ชอบปานกลาง

.....ไม่ชอบมาก

.....ไม่ชอบมากที่สุด

ข้อเสนอแนะ.....

.....

4. ลักษณะเนื้อสัมผัสของไก่ทอด

.....ชอบมากที่สุด

.....ชอบมาก

.....ชอบปานกลาง

.....ชอบเล็กน้อย

.....เฉย ๆ *

.....ไม่ชอบเล็กน้อย

.....ไม่ชอบปานกลาง

.....ไม่ชอบมาก

.....ไม่ชอบมากที่สุด

.....ไม่ชอบมากที่สุด

ข้อเสนอแนะ.....

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APPENDIX I

Frequency table, Mean, Median, Mode and Standard Deviation of 9-point Hedonic Scores after Sensory Evaluation of Cakes substituted by Dietary fiber from fresh and dried corn silk (FDF and DDF) and Control formula from 30 panelist

1. Overall acceptability

1.1 Control formula

Figure I1. Mean, Median, Mode and Standard Deviation of overall acceptability from cake control formula¹

Statistics Overall acceptability

N	Valid	30
	Missing	0
	Mean	7.5333
	Median	8.0000
	Mode	8.00
	Std. Deviation	.89955

¹Results are mean \pm SD from RCBD design, n=30.

Figure I2. Frequency, Percent, Valid percent and Cumulative Percent of overall acceptability from cake control formula¹

Overall acceptability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Like Slightly	4	13.3	13.3	13.3
	Like Moderately	10	33.3	33.3	46.7
	Like Very Much	12	40.0	40.0	86.7
	Like Extremely	4	13.3	13.3	100.0
Total		30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely

1.2 FDF substituted 15% formula

Figure I3. Mean, Median, Mode and Standard Deviation of Overall acceptability from FDF substituted 15% formula¹

**Statistics
Overall acceptability**

N	Valid	30
	Missing	0
Mean		5.4000
Median		6.0000
Mode		7.00
Std. Deviation		1.99309

¹Results are mean ± SD from RCBD design, n=30.

Figure I4. Frequency, Percent, Valid percent and Cumulative Percent of Overall acceptability from FDF substituted 15% formula¹

Overall acceptability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dislike Extremely	1	3.3	3.3	3.3
	Dislike Very Much	3	10.0	10.0	13.3
	Dislike Moderately	1	3.3	3.3	16.7
	Dislike Slightly	6	20.0	20.0	36.7
	Neither Like nor Dislike	1	3.3	3.3	40.0
	Like Slightly	5	16.7	16.7	56.7
	Like Moderately	11	36.7	36.7	93.3
	Like Very Much	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

1.3 DDF substituted 15% formula

Figure I5. Mean, Median, Mode and Standard Deviation of Overall acceptability from DDF substituted 15% formula¹

**Statistics
Overall acceptability**

N	Valid	30
	Missing	0
Mean		5.5333
Median		6.0000
Mode		7.00
Std. Deviation		1.61316

¹Results are mean \pm SD from RCBD design, n=30.

Figure I6. Frequency, Percent, Valid percent and Cumulative Percent of Overall acceptability from DDF substituted 15% formula¹

Overall acceptability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dislike Extremely	2	6.7	6.7	6.7
	Dislike Moderately	1	3.3	3.3	10.0
	Dislike Slightly	5	16.7	16.7	26.7
	Neither Like nor Dislike	6	20.0	20.0	46.7
	Like Slightly	4	13.3	13.3	60.0
	Like Moderately	11	36.7	36.7	96.7
	Like Very Much	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

2. Color of cakes

2.1 Control

Figure I7. Mean, Median, Mode and Standard Deviation of Color from control formula¹

Statistics

The color of product that subject can evaluate

N	Valid	30
	Missing	0
Mean		7.3000
Median		7.0000
Mode		7.00
Std. Deviation		.83666

¹Results are mean ± SD from RCBD design, n=30.

Figure I8. Frequency, Percent, Valid percent and Cumulative Percent of Color from control formula¹

The color of product that subject can evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Like Slightly	5	16.7	16.7	16.7
	Like Moderately	13	43.3	43.3	60.0
	Like Very Much	10	33.3	33.3	93.3
	Like Extremely	2	6.7	6.7	100.0
Total		30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

2.2 FDF substituted 15%formula

Figure I9. Mean, Median, Mode and Standard Deviation of Color from FDF substituted 15%formula¹

Statistics

The color of product that subject can evaluate

N	Valid	30
	Missing	0
Mean		5.5000
Median		6.0000
Mode		7.00
Std. Deviation		1.61352

¹Results are mean \pm SD from RCBD design, n=30.

Figure I10. Frequency, Percent, Valid percent and Cumulative Percent of color from FDF substituted 15%formula¹

The color of product that subject can evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dislike Extremely	1	3.3	3.3	3.3
	Dislike Very Much	1	3.3	3.3	6.7
	Dislike Moderately	1	3.3	3.3	10.0
	Dislike Slightly	5	16.7	16.7	26.7
	Neither Like nor Dislike	3	10.0	10.0	36.7
	Like Slightly	9	30.0	30.0	66.7
	Like Moderately	10	33.3	33.3	100.0
	Total	30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much , Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

2.3 DDF substituted 15%formula

Figure I11. Mean, Median, Mode and Standard Deviation of Color from DDF substituted 15%formula¹

Statistics
The color of product that subject can evaluate

N	Valid	30
	Missing	0
Mean		5.6000
Median		6.0000
Mode		6.00 ^a
Std. Deviation		1.58875

a. Multiple modes exist. The smallest value is shown

¹Results are mean ± SD from RCBD design, n=30.

Figure I12. Frequency, Percent, Valid percent and Cumulative Percent of Color from DDF substituted 15%formula¹

The color of product that subject can evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dislike extremely	1	3.3	3.3	3.3
	Dislike very much	1	3.3	3.3	6.7
	Dislike slightly	5	16.7	16.7	23.3
	Like Moderately	4	13.3	13.3	36.7
	Neither Like nor Dislike				
	Like slightly	9	30.0	30.0	66.7
	Like moderately	9	30.0	30.0	96.7
	Like very much	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

3. Texture

3.1 Control

Figure I13. Mean, Median, Mode and Standard Deviation of Texture from control formula¹

**Statistics
Texture of subject that
evaluate**

N	Valid	30
	Missing	0
Mean		6.9333
Median		7.0000
Mode		7.00
Std. Deviation		1.04826

¹Results are mean ± SD from RCBD design, n=30.

Figure I14. Frequency, Percent, Valid percent and Cumulative Percent of Texture from control formula¹

Taste that subject evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Like slightly	2	6.7	6.7	6.7
	Like moderately	9	30.0	30.0	36.7
	Like very much	15	50.0	50.0	86.7
	Like extremely	4	13.3	13.3	100.0
	Total	30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

3.2 FDF substituted 15%formula

Figure I15. Mean, Median, Mode and Standard Deviation of Texture from FDF substituted 15%formula¹

**Statistics
Texture of subject
that evaluate**

N	Valid	30
	Missing	0
Mean		4.8667
Median		5.5000
Mode		6.00
Std. Deviation		1.94286

¹Results are mean ± SD from RCBD design, n=30.

Figure I16. Frequency, Percent, Valid percent and Cumulative Percent of Texture from FDF substituted 15%formula¹

Texture of subject that evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dislike extremely	2	6.7	6.7	6.7
	Dislike very much	3	10.0	10.0	16.7
	Dislike moderately	2	6.7	6.7	23.3
	Dislike slightly	5	16.7	16.7	40.0
	Neither Like nor Dislike	3	10.0	10.0	50.0
	Like slightly	9	30.0	30.0	80.0
	Like moderately	5	16.7	16.7	96.7
	Like very much	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

3.3 DDF substituted 15%formula

Figure I17. Mean, Median, Mode and Standard Deviation of Texture from DDF substituted 15%formula¹

Statistics
Texture of subject that evaluate

N	Valid	30
	Missing	0
Mean		5.2333
Median		5.5000
Mode		6.00
Std. Deviation		1.77499

¹Results are mean ± SD from RCBD design, n=30.

Figure I18. Frequency, Percent, Valid percent and Cumulative Percent of Texture from DDF substituted 15%formula ¹

Texture of subject that evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dislike extremely	1	3.3	3.3	3.3
	Dislike very much	2	6.7	6.7	10.0
	Dislike moderately	1	3.3	3.3	13.3
	Dislike slightly	6	20.0	20.0	33.3
	Neither Like nor Dislike	5	16.7	16.7	50.0
	Like slightly	7	23.3	23.3	73.3
	Like moderately	6	20.0	20.0	93.3
	Like very much	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

4. Overall appearance

4.1 Control

Figure I19. Mean, Median, Mode and Standard Deviation of Overall appearance from control formula ¹

Statistics
Overall appearance that subject evaluate

N	Valid	30
	Missing	0
Mean		7.3667
Median		7.0000
Mode		7.00 ^a
Std. Deviation		.80872

Statistics
Overall appearance that
subject evaluate

N	Valid	30
	Missing	0
Mean		7.3667
Median		7.0000
Mode		7.00 ^a
Std. Deviation		.80872

a. Multiple modes exist. The smallest value is shown

¹Results are mean ± SD from RCBD design, n=30.

Figure I20. Frequency, Percent, Valid percent and Cumulative Percent of Overall appearance from control formula ¹

Overall appearance that subject evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neither Like nor Dislike	1	3.3	3.3	3.3
	Like slightly	2	6.7	6.7	10.0
	Like moderately	13	43.3	43.3	53.3
	Like very much	13	43.3	43.3	96.7
	Like extremely	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

4.2 FDF substituted 15% formula

Figure I21. Mean, Median, Mode and Standard Deviation of Overall appearance from FDF substituted 15% formula ¹

Statistics
Overall appearance that subject evaluate

N	Valid	30
	Missing	0
Mean		5.1333
Median		5.0000
Mode		7.00
Std. Deviation		1.85199

¹Results are mean ± SD from RCBD design, n=30.

Figure I22. Frequency, Percent, Valid percent and Cumulative Percent of Overall appearance from FDF substituted 15% formula¹

Overall appearance that subject evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dislike extremely	1	3.3	3.3	3.3
	Dislike very much	2	6.7	6.7	10.0
	Dislike moderately	2	6.7	6.7	16.7
	Dislike slightly	7	23.3	23.3	40.0
	Neither Like nor Dislike slightly	5	16.7	16.7	56.7
	Like very much	2	6.7	6.7	63.3
	Like moderately	10	33.3	33.3	96.7
	Like very much	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

4.3 DDF substituted 15% formula

Figure I23. Mean, Median, Mode and Standard Deviation of Overall appearance from DDF substituted 15% formula¹

Statistics
Overall appearance that subject evaluate

N	Valid	30
	Missing	0
Mean		5.6000
Median		6.0000
Mode		6.00 ^a
Std. Deviation		1.63158

a. Multiple modes exist. The smallest value is shown

¹Results are mean ± SD from RCBD design, n=30.

Figure I24. Frequency, Percent, Valid percent and Cumulative Percent of overall appearance from FDF substituted 15% formula¹

Overall appearance that subject evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dislike extremely	1	3.3	3.3	3.3
	Dislike very much	1	3.3	3.3	6.7
	Dislike slightly	5	16.7	16.7	23.3
	Neither Like nor Dislike	5	16.7	16.7	40.0
	Like slightly	8	26.7	26.7	66.7
	Like moderately	8	26.7	26.7	93.3
	Like very much	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

5. Taste

5.1 Control

Figure I25. Mean, Median, Mode and Standard Deviation of Taste from control formula ¹

**Statistics
taste that subject evaluate**

N	Valid	30
	Missing	0
Mean		7.7000
Median		8.0000
Mode		8.00
Std. Deviation		.79438

¹Results are mean ± SD from RCBD design, n=30.

Figure I26. Frequency, Percent, Valid percent and Cumulative Percent of Taste from control formula¹

Taste that subject evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	little like	2	6.7	6.7	6.7
	moderate like	9	30.0	30.0	36.7
	very like	15	50.0	50.0	86.7
	extremely like	4	13.3	13.3	100.0
Total		30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

5.2 FDF substituted 15%formula

Figure I27. Mean, Median, Mode and Standard Deviation of tastes from FDF substituted 15%formula¹

Statistics
Taste that subject evaluate

N	Valid	30
	Missing	0
Mean		6.1667
Median		7.0000
Mode		7.00
Std. Deviation		1.76329

¹Results are mean ± SD from RCBD design, n=30.

Figure I28. Frequency, Percent, Valid percent and Cumulative Percent of tastes from FDF substituted 15%formula¹

Taste that subject evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dislike extremely	2	6.7	6.7	6.7
	Dislike moderately	1	3.3	3.3	10.0
	Dislike slightly	1	3.3	3.3	13.3
	Neither Like nor Dislike	1	3.3	3.3	16.7
	Like slightly	7	23.3	23.3	40.0
	Like moderately	15	50.0	50.0	90.0
	Like very much	3	10.0	10.0	100.0
	Total	30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

5.3 DDF substituted 15% formula

Figure I29. Mean, Median, Mode and Standard Deviation of Taste from FDF substituted 15%formula¹

Statistics
Taste that subject evaluate

N	Valid	30
	Missing	0
Mean		5.3667
Median		6.0000
Mode		6.00 ^a
Std. Deviation		1.80962

a. Multiple modes exist. The smallest value is shown

¹Results are mean ± SD from RCBD design, n=30

Figure I30. Frequency, Percent, Valid percent and Cumulative Percent of Taste from DDF substituted 15%formula¹

Taste that subject evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dislike extremely	2	6.7	6.7	6.7
	Dislike very much	1	3.3	3.3	10.0
	Dislike very much	5	16.7	16.7	26.7
	Neither Like nor Dislike	6	20.0	20.0	46.7
	Like slightly	7	23.3	23.3	70.0
	Like moderately	7	23.3	23.3	93.3
	Like very much	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

6. Flavor

6.1 Control

Figure I31. Mean, Median, Mode and Standard Deviation of Flavor from control formula¹

Statistics
The flavor of product that subject can evaluate

N	Valid	30
	Missing	0
Mean		7.3000
Median		7.0000
Mode		7.00
Std. Deviation		1.14921

¹Results are mean ± SD from RCBD design, n=30

Figure I32. Frequency, Percent, Valid percent and Cumulative Percent of tastes from control formula¹

The flavor of product that subject can evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dislike very much	1	3.3	3.3	3.3
	Neither Like nor Dislike	2	6.7	6.7	10.0
	Like little	1	3.3	3.3	13.3
	Like moderately	12	40.0	40.0	53.3
	Like very much	11	36.7	36.7	90.0
	extremely like	3	10.0	10.0	100.0
	Total	30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely.

6.2 FDF substituted 15%formula

Figure I33. Mean, Median, Mode and Standard Deviation of Flavor from FDF substituted 15%formula¹

Statistics
The flavor of product that subject can evaluate

N	Valid	30
	Missing	0
Mean		6.3333
Median		7.0000
Mode		8.00
Std. Deviation		1.74856

¹Results are mean ± SD from RCBD design, n=30

Figure I34. Frequency, Percent, Valid percent and Cumulative Percent of Taste from FDF substituted 15%formula¹

The flavor of product that subject can evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dislike very much	1	3.3	3.3	3.3
	Dislike moderately	2	6.7	6.7	10.0
	Dislike slightly	2	6.7	6.7	16.7
	Neither Like nor Dislike	2	6.7	6.7	23.3
	Like slightly	7	23.3	23.3	46.7
	Like moderately	7	23.3	23.3	70.0
	Like very much	8	26.7	26.7	96.7
	Like extremely	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much, Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely

6.3 DDF substituted 15% formula

Figure I35. Mean, Median, Mode and Standard Deviation of flavor from DDF substituted 15%formula¹

Statistics
The flavor of product that subject can evaluate

N	Valid	30
	Missing	0
Mean		5.0000
Median		5.0000
Mode		6.00
Std. Deviation		1.72207

¹Results are mean ± SD from RCBD design, n=30

Figure I36. Frequency, Percent, Valid percent and Cumulative Percent of Taste from FDF substituted 15%formula¹

Taste that subject evaluate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dislike extremely	2	6.7	6.7	6.7
	Dislike very much	1	3.3	3.3	10.0
	Dislike slightly	5	16.7	16.7	26.7
	Neither Like nor Dislike	6	20.0	20.0	46.7
	Like slightly	7	23.3	23.3	70.0
	Like moderately	7	23.3	23.3	93.3
	Like very much	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

¹Nine-point hedonic scale consist of Like Extremely, Like Very Much , Like Moderately, Like Slightly, Neither Like nor Dislike, Dislike Slightly, Dislike Moderately, Dislike Very Much and Dislike Extremely