Appendix

Appendix A
Pictures

Pictures

Figure A.1 Soft yogurt candy prototypes

Figure A.2 Soft yogurt candy with different sugar sources

Figure A.3 Soft yogurt candy with different honey contents

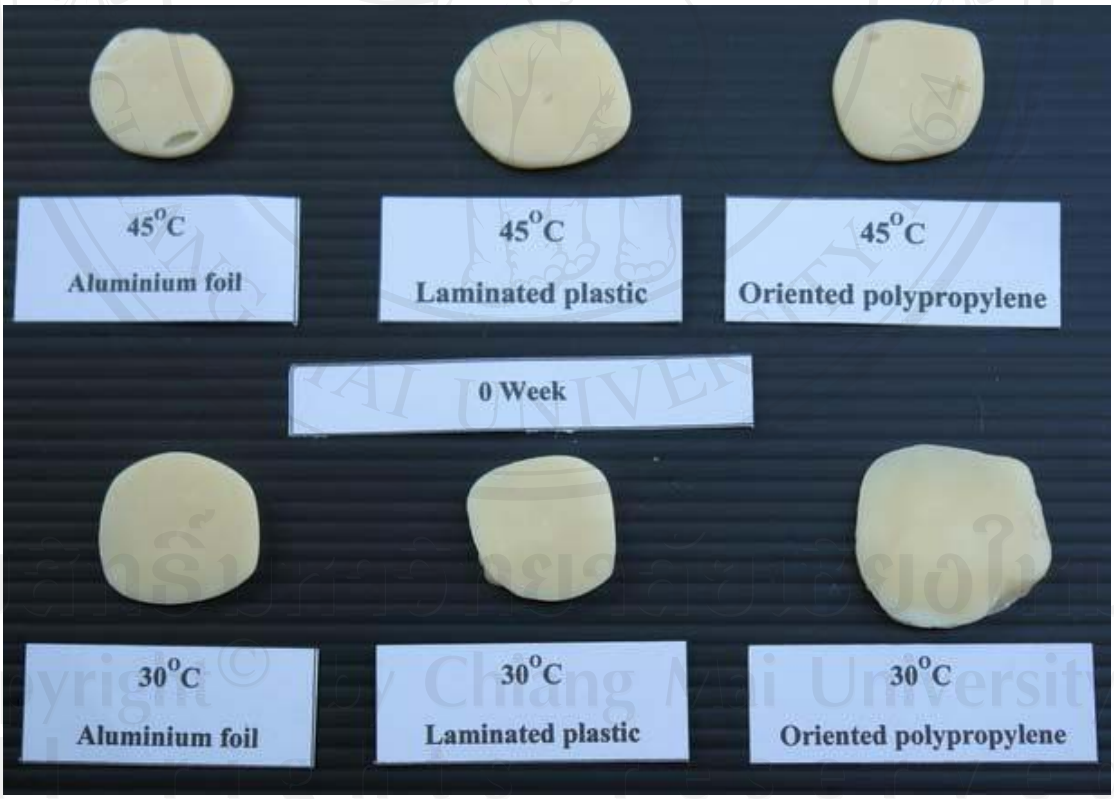


Figure A.4 Soft yogurt candy at the beginning of storage

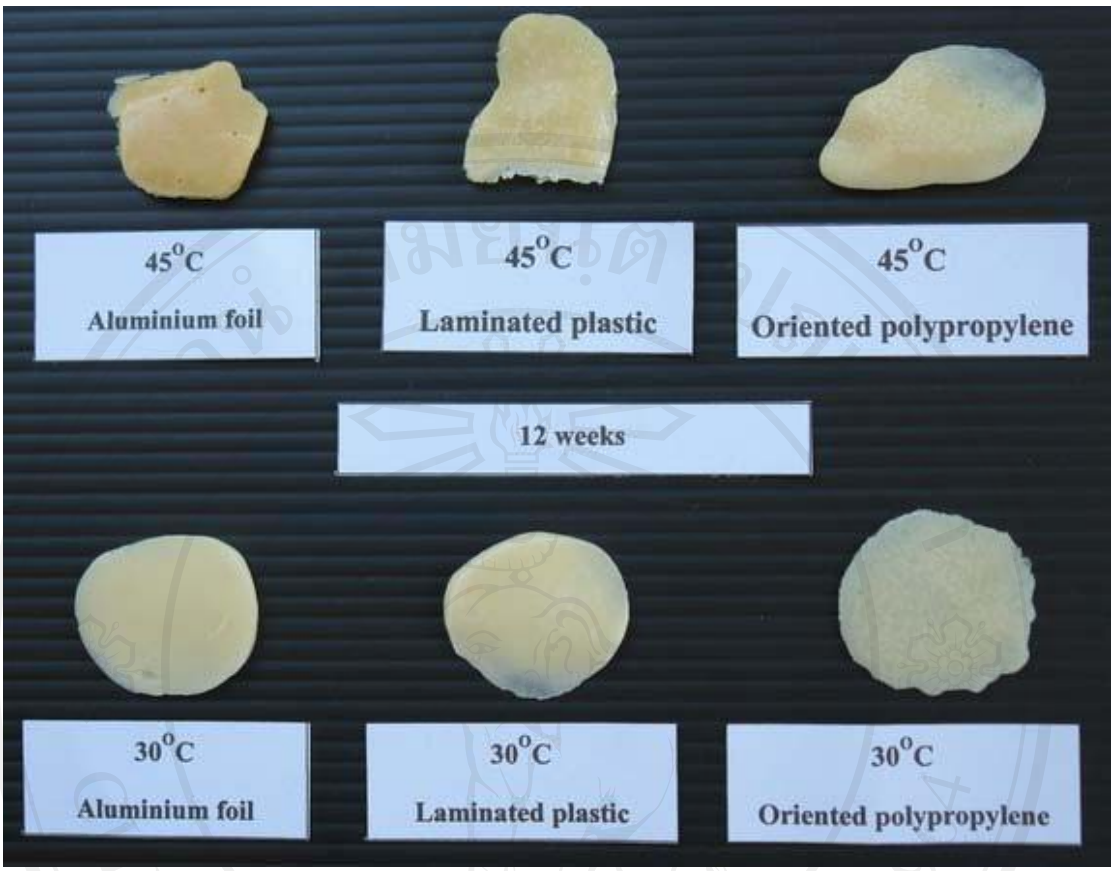


Figure A.5 Soft yogurt candy after 12 weeks of storage

Appendix B
Physical, chemical and microbiological analyses

Physical, chemical and microbiological analyses

1. Physical methods

1.1 Color analysis

The L*, a* and b* values were measured with a colorimeter (Colorimeter, Minolta CR-300, Japan). Samples were prepared by placing them in a petri dish.

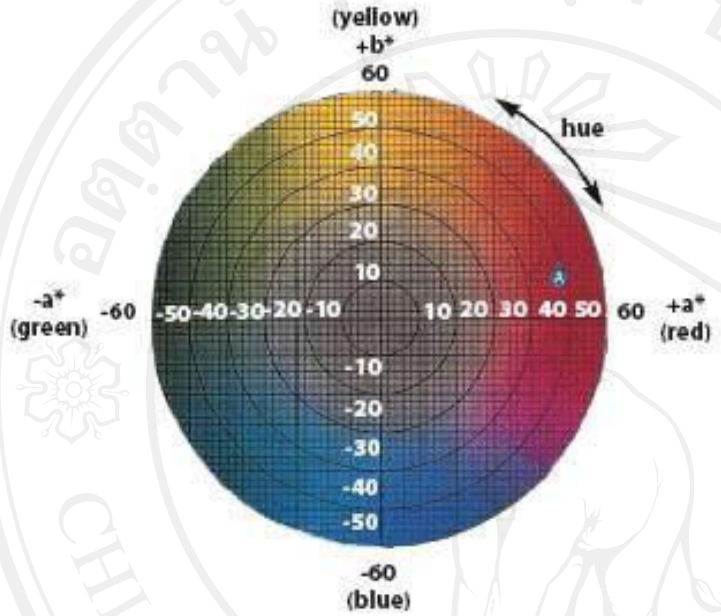


Figure 1. A graphic of the Lab color model
Source
: http://www.qualitydigest.com/IQedit/Images/Articles%20and%20Columns/February%2010/km3.jpg

L* value = A lightness factor with a value range of 0-100%
a* value = Describes how red/green a color is, with a value range from (-) 60 to (+) 60 + values are more red; - values are more green)
b* value = Describes how yellow/blue a color is, a value range from (-) 60 to (+) 60 + values are more yellow; - values are more blue)

1.2 Water activity

An amount of 2 g sample was measured by an a_W meter at 30°C.

1.3 Total soluble solid

Pipette 10 ml of 0.1% candy solution into a flask. Drop 2-3 drops on Hand refractometer.

Total soluble solid = % Brix x 0.1 x 100

2. Chemical methods

2.1 Total titratable acidity analysis (AOAC, 2000)

Pipette 10 ml of 0.1% candy solution into a flask. Drop 2-3 drops of phenolphthalein into the flask and titrate 0.1 M NaOH until the samples reach the end point (sample solution became pink that was persisted for 30 sec)

$$\% \text{ lactic acid} = \frac{\text{ml of 0.1 M NAOH} \times 0.1 \times 0.009 \times 100}{\text{Weight of sample}}$$

2.2 Moisture and Total solid analysis (AOAC, 2000)

Digest pure quartz sand with HCl. Wash until the sand is acid free, dry, ignite and keep in stop cottle. Place 25-30g prepared sand and short stirring rod in empty moisture dish, fitted with a cover. Dry throughly, cover the dish, cool in a desicator and weight immediately. Add 1 g candy sample and mix throughly with sand. Heat the dish with its contents on a steam bath 15-20 min, stirring at 2-3 min interval, or until the mass becomes too stiff to manipulate. Uncover the dish and dry it for 3h in on proven provided with opening for ventilation and maintained at $100 \pm 3^{o}C$. Cover the dish while it is still in the oven, transfer to a decciator and wieght the dish soon after it reached a room temperature. Dry the sample again for several times until the sample has a constance weight.

$$\% \text{ Moisture content} = \frac{\text{Loss in the sample weight during drying}}{\text{Initial weight of the sample}} \times 100$$

$$\% \text{ total solid} = 100 - \% \text{ moisture content}$$

2.3 Sugar analysis (AOAC, 2000)

2.3.1 Reducing sugar

Reducing sugar before inversion (D_1)

3 g of candy was put into 250 ml volumetric flask. Add 5 ml of Carrez I and II solutions. Shake and adjust to 250 ml with distilled water. Put aside the mixed solution for precipitation about 20
min and filter the solution with a Whatman filter paper no.4. Pour the solution filtrate into a 50 ml burette. Pipette 5 ml of Fehling solution no. 1 and 2 into a flask. Heat the Fehling solution on hot plate and add one drop of methylene blue indicator. Titrate the Fehling solution with the filtrate solution in the burette until the Fehling solution has a color of orange-red.

$$\text{Reducing Sugar} = \frac{100X}{Y}$$

X = Sample(g) of 100 ml solution
Y = Invert sugar (g)

2.3.2 Inversion sugar (D_2)

Pipette 50 ml of filtrate solution from the previous determination into a volumetric flask. Add 10 ml of 6.34 N hydrochloric acid. Place the volumetric flask in a water bath at 70°C for 10 min and cool immediately. Make the mixture solution neutral with 5 N NaOH and adjust to 100 ml with water. Do titration following the procedure of reducing sugar.

% sucrose (S) = % different between D1 and D2 x 0.95

% total sugar = D1 + S

When D1 = % Reducing sugar

D2 = % Inversion sugar

Table 1 Invert sugar table for 10 ml Fehling's solution

ml of sugar solution required	Solutions containing besides invert sugar: No sucrose		1 g sucrose per 100 ml		5 g sucrose per 100 ml		10 g sucrose per 100 ml		25 g sucrose per 100 ml	
	Invert sugar factor*	mg invert sugar per 100 ml	Invert sugar factor*	mg invert sugar per 100 ml	Invert sugar factor*	mg invert sugar per 100 ml	Invert sugar factor*	mg invert sugar per 100 ml	Invert sugar factor*	mg invert sugar per 100 ml
15	50·5	336	49·9	333	47·6	317	46·1	307	43·4	289
16	50·6	316	50·0	312	47·6	297	46·1	288	43·4	271
17	50·7	298	50·1	295	47·6	280	46·1	271	43·4	255
18	50·8	282	50·1	278	47·6	264	46·1	256	43.3	240
19	50·8	267	50·2	264	47·6	250	46·1	243	43·3	227
20	50·9	254·5	50·2	251·0	47·6	238·0	46·1	230·5	43·2	216
21	51·0	242·9	50·2	239·0	47·6	226·7	46·1	219·5	43·2	206
22	51·0	231·8	50·3	228·2	47·6	216·4	46·1	209·5	43·1	196
23	51·1	222·2	50·3	218·7	47·6	207·0	46·1	200·4	43·0	187
24	51·2	213·3	50·3	209·8	47·6	198·3	46·1	192·1	42·9	179
25	51·2	204·8	50·4	201·6	47·6	190·4	46·0	184·0	42·8	171
26	51·3	197·4	50·4	193·8	47·6	183·1	46·0	176·9	42·8	164
27	51·4	190·4	50·4	186·7	47·6	176·4	46·0	170·4	42·7	158
28	51·4	183·7	50·5	180·2	47·7	170·3	46·0	164·3	42·7	152
29	51·5	177·6	50·5	174·1	47·7	164·5	46·0	158·6	42·6	147
30	51·5	171·7	50·5	168·3	47·7	159·0	46·0	153·3	42·5	142
31	51·6	166·3	50·6	163·1	47·7	153·9	45·9	148·1	42·5	137
32	51·6	161·2	50·6	158·1	47·7	149·1	45·9	143·4	42·4	132
33	51·7	156·6	50·6	153·3	47·7	144·5	45·9	139·1	42·3	128
34	51·7	152·2	50·6	148·9	47·7	140·3	45·8	134·9	42·2	124
35	51·8	147·9	50·7	144·7	47·7	136·3	45·8	130·9	42·2	121
36	51·8	143·9	50·7	140·7	47·7	132·5	45·8	127·1	42·1	117
37	51·9	140·2	50·7	137·0	47·7	128·9	45·7	123·5	42·0	114
38	51·9	136·6	50·7	133·5	47·7	125·5	45·7	120·3	42·0	111
39	52·0	133·3	50·8	130·2	47·7	122·3	45·7	117·1	41·9	107
40	52·0	130·1	50·8	127·0	47·7	119·2	45·6	114·1	41·8	104
41	52·1	127·1	50·8	123·9	47·7	116·3	45·6	111·2	41·8	102
42	52·1	124·2	50·8	121·0	47·7	113·5	45·6	108·5	41·7	99
43	52·2	121·4	50·8	118·2	47·7	110·9	45·5	105·8	41·6	97
44	52·2	118·7	50·9	115·6	47·7	108·4	45·5	103·4	41·5	94
45	52·3	116·1	50·9	113·1	47·7	106·0	45·4	101·0	41·4	92
46	52·3	113·7	50·9	110·6	47·7	103·7	45·4	98·7	41·4	90
47	52·4	111·4	50·9	108·2	47·7	101·5	45·3	96·4	41·3	88
48	52·4	109·2	50·9	106·0	47·7	99·4	45·3	94·3	41·2	86
49	52·5	107·1	51·0	104·0	47·7	97·4	45·2	92·3	41·1	84
50	52·5	105·1	51·0	102·0	47·7	95·4	45·2	90·4	41·0	82

2.4 Protein analysis (AOAC, 2000)

Place sample (3 g) in a digestion flask. Add 8 g catalyst mixture and 20 ml H_2SO_4. Place the flask in an inclined position in a digestion machine and heat the machine gently until frothing ceases. Continue boil briskly until the solution clears (~2 h). Cool, add distilled water to dilute the mixture solution and pour into a distilling flask. Add 400 ml H_2O (ammonia-free water) and a few Zn granules to prevent bumping. Immediately immerse a condenser tip into a receiver that contains 50 ml of 2% boric acid solution in a 500 ml flask and 5-7 drops indicator. Add 75 ml of 50% sodium hydroxide using a funnel into the distilling equipment. Rotate the distilling flask to

mix the contents thoroughly; then heat until all NH_3 has been distilled. Remove the receiver, wash the tip of the condenser and titrate excess standard acid in distillate with 0.05 M H_2SO_4. Do blank determination to correct any nitrogen content in reagents.

$$\% N = \frac{(V_a - V_b) \times N.\ H_2SO_4 \times 1.4007}{\text{Volume of sample}}$$

When V_a = ml of standard acid for sample titration

V_b = ml of standard acid for blank titration

NH_2SO_4 = normality of acid

% Protein = % N x factor (factor value = 6.25)

2.5 Fat analysis (AOAC, 2000)

Place sample (1 g) and place into a separated funnel. Add 10 ml water and shake. Add 1.25 ml ammonia solution, 10 ml ethyl alcohol and 25 ml diethyl ether, close with a stopper and shake vigorously for 1 min. Careful to release the pressure of the funnel. Add 25 ml petroleum ether, close the stopper and shake vigorously for 1 min. Careful to release the pressure. Let stand until an upper liquid is practically clear (~30 min). Pour the upper clear solution into a previously weighed beaker. Take the beaker to stand in a hood until diethyl ether and petroleum are evaporated and place the beaker in a hot air oven (T = 102 ± 2^oC) for 2 h. Cool in a desicator and weigh the sample.

$$\% \text{ Fat content} = \frac{(W_1 - W_2) \times 100}{\text{Vol of sample}}$$

W_1 = Weight of beaker and fat

W_2 = Weight of beaker

2.6 Ash analysis (AOAC, 2000)

Weigh 3-5 g sample into an ashing dish that has been heated, cooled in a desicator, and weighed soon after reaching room temperature. Before ashing the sample, heat the sample on a bunchen lamp until no more black smoke appeared. Then ash the sample in a muffle furnace at 550^oC until light gray ash results or until it reaches a constant weight. Cool in a desicator and weight soon after reaching room temperature.

$$\% \text{ Ash} = \frac{\text{Weight of ash} \times 100}{\text{Weight of sample}}$$

2.7 Carbohydrate content (AOAC, 2000)

Carbohydrate content was determined by measuring the difference of the original sample minus the moisture, protein, crude fat and mineral contents calculated at the same moisture level.

3.Microbiological quality analysis

1.Total plate counts

1.1 Chemical

Maximum Recovery Diluent (MRD)

Plate Count Agar (PCA)

1.2 Preparation of culture media and reagents

1.MRD diluent. Dissolved 9.5 g MRD in 100 ml distilled water and then autoclaveing for 15 min at 121°C.

2.PCA. Disolved 22.5 g PCA in 1 l distilled water and then autoclaving for 15 min at 121°C.

1.3 Measurement of total microorganisms in yoghurt candy samples

1. Prepare 1:10, 1:100, 1:1000 dilution of the yoghurt candy samples. Mix the samples throughly by shaking to ensure uniformity of the solution.

2. Pipette 1 ml representative samples from each dilution into a petri dish. Two petri dish dilution.

3. Pour 15-20 ml PCA into petri dish from 2 and mix the sample and the media throughly by gently shaking into the left and right combined with up and down. Let the petri dishes stand on the bench until the PCA media was harden with a smooth even surface on the top.

4. Incubate invertly the petri dished for 48 h at 35°C. Conut all the colonies that growth in the petri dishes in the range of 30-300 colonies. The average number of colonies from duplicate plates for each dilution was calculated and used in the report.

2.Yeast and mould counts

1. Maximum Recovery Diluent (MRD)

2. Potato Dextrose Agar (PDA)

2.2Preparetion of culture media and reagents

1. MRD diluent. Dissolved 9.5 g MRD in 1000 ml distilled water and then autoclaving for 15 min at 121°C.

2. PDA. Dissolved 39.0 g PDA in 1 l distilled water and then autoclaving for 15 min at 121°C.

2.3 Measurement of yeast and mold in yoghurt candy samples

1. Prepare 1:10, 1:100 and 1:1000 dilution of yoghurt candy samples. Mix the samples throughly by shaking to ensure uniformity of the solution.

2. Pipette 1 ml representative samples from each dilution into a petri dish. Two petri dish for each dilution.

3. Pour 15-12 ml PDA into a petri dish from 2 and mix the sample and the media throughly by gently shaking into the left and right combined with up and down. Let the petri dishes stand the bech until the PDA media was harden with a smooth even surface on the top.

4. Incubate invertly the petri dishes for 120 h at 25°C. Count all colonies that growth in the petri dishes within the range of 30-300 colonies. Calculate the average number of colonies from duplicate plates for each dilution and use these numbers for a statistical analysis and report.

3. Osmophilic yeast Counts

3.1Chemical

1. Maximum Recovery Diluent (MRD)

2. Wort medium agar

3.2Preparetion of culture media and reagents

1. MRD diluent. Dissolved 9.5 g MRD in 100 ml distilled water and then autoclaving for 15 min at 121°C.

2. Wort meduim agar. The agar was made by dissolving 55 g of solid sugar in 45°Brix solution containing 35 g sucrose and 10 g glucose in 100 ml deionized water and then autoclaving for 15 min at 121^{o}C.

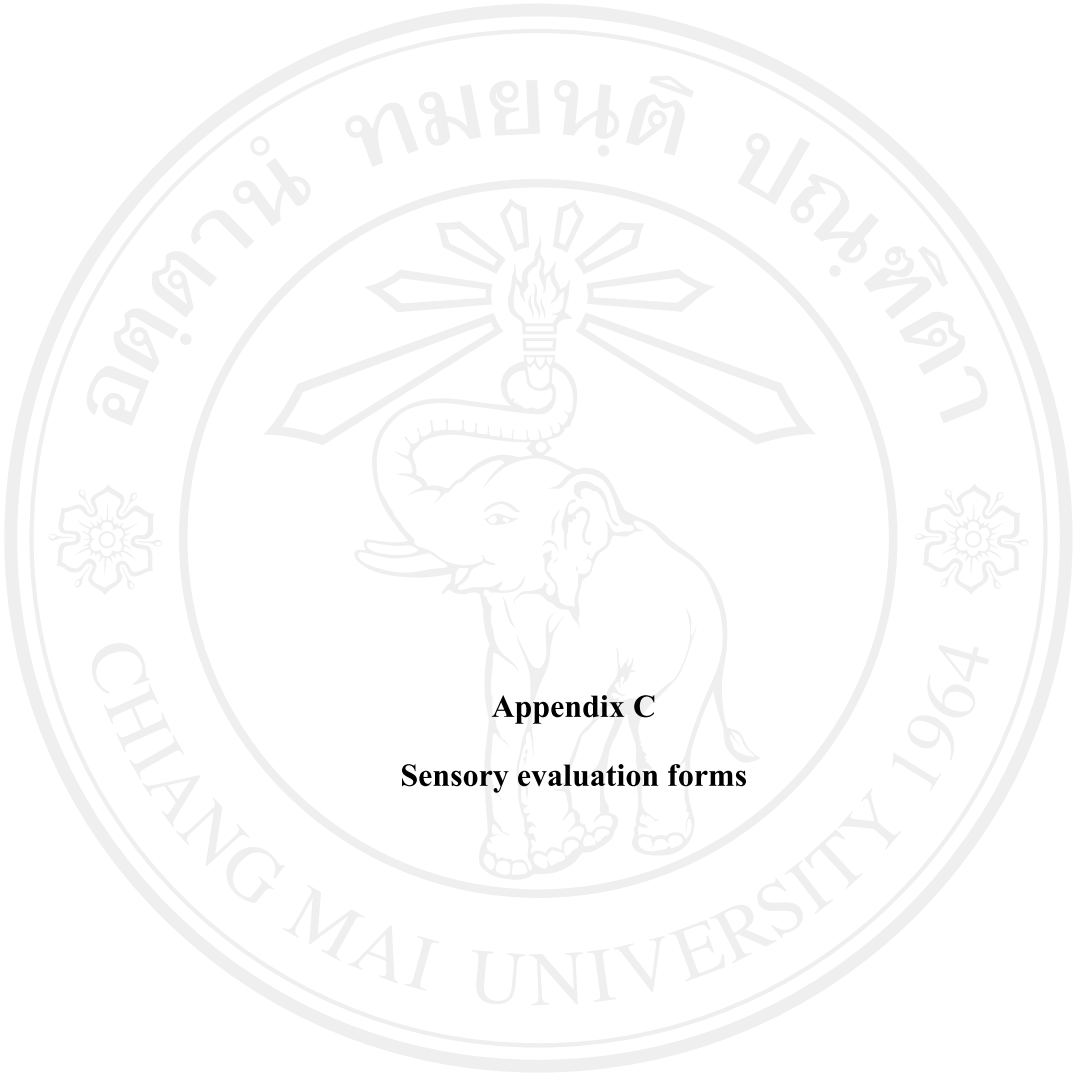
3.3 Measurement of yeast and mold in yoghurt candy samples

1. Prepare 1:10, 1:100 and 1:1000 dilution of yoghurt candy samples. Mix the samples throughly by shaking to ensure uniformity of the solution.

2. Pipette 1 ml representative samples from each dilution into a petri dish. Two petri dish for each dilution.

3. Pour 15-12 ml wort medium agar into a petri dish from 2 and mix the sample and the media throughly by gently shaking into the left and right combined with up and down. Let the petri dishes stand the bech until the wort medium agar was harden with a smooth even surface on the top.

4. Incubate invertly the petri dishes for 120 h at 25^{o}C. Count all colonies that growth in the petri dishes within the range of 30-300 colonies. Calculate the average number of colonies from duplicate plates for each dilution and use these numbers for a statistical analysis and report.



Appendix C

Sensory evaluation forms

แบบทดสอบทางประสาทสัมผัสผลิตภัณฑ์ลูกกวาดชนิดนุ่มผสมโยเกิร์ต

Name.....Date.....

กรุณาชิมตัวอย่างจากซ้ายไปขวา แล้วกำหนดเครื่องหมาย I ลงบนตำแหน่งที่ท่านคิดว่าเป็นระดับของลักษณะนั้นของผลิตภัณฑ์

ตัวอย่าง

Color : _____

อ่อน เข้ม

Flavour : _____

น้อย มาก

Hardness : _____

แข็งน้อย แข็งมาก

Sweet : _____

หวานน้อย หวานมาก

Salty : _____

เค็มน้อย เค็มมาก

Chewiness : _____

นุ่ม เหนียว

Adhesiveness : _____

น้อย มาก

Overall : _____

น้อย มาก

Suggestion

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Thankyou

แบบทดสอบทางประสาทสัมผัสผลิตภัณฑ์ลูกกวาดชนิดนุ่มผสมโยเกิร์ต

Name.....Date.....

กรุณาชิมตัวอย่างจากซ้ายไปขวา แล้วกำหนดเครื่องหมาย I_x ลงบนตำแหน่งที่ท่านคิดว่าเป็นระดับของลักษณะนั้นของผลิตภัณฑ์ตัวอย่าง เมื่อกำหนดให้ I เป็นระดับในอุดมคติของลักษณะนั้นที่ท่านต้องการ

Color :

อ่อน เข้ม

Flavour :

น้อย มาก

Hardness :

แข็งน้อย แข็งมาก

Sweet :

หวานน้อย หวานมาก

Salty :

เค็มน้อย เค็มมาก

Chewiness :

นุ่ม เหนียว

Adhesiveness :

น้อย มาก

Overall :

น้อย มาก

Suggestion

.....

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Thankyou

แบบทดสอบทางประสาทสัมผัสผลิตภัณฑ์ลูกกวาดชนิดนุ่มผสมโยเกิร์ต

Name.....Date.....

กรุณาชิมตัวอย่างจากซ้ายไปขวาแล้วให้คะแนนความชอบต่อผลิตภัณฑ์ให้ตรงกับความรู้สึกของท่านมากที่สุดโดยที่

9 = ชอบมากที่สุด **6 = ชอบเล็กน้อย** **3 = ไม่ชอบปานกลาง**

8 = ชอบมาก **5 = บอกไม่ได้ว่าชอบหรือไม่ชอบ** **2 = ไม่ชอบมาก**

7 = ชอบปานกลาง **4 = ไม่ชอบเล็กน้อย** **1 = ไม่ชอบมากที่สุด**

รหัสตัวอย่าง	_____	_____	_____	_____	_____	_____
Color	_____	_____	_____	_____	_____	_____
Flavour	_____	_____	_____	_____	_____	_____
Hardness	_____	_____	_____	_____	_____	_____
Sweet	_____	_____	_____	_____	_____	_____
Salty	_____	_____	_____	_____	_____	_____
Chewiness	_____	_____	_____	_____	_____	_____
Adhesiveness	_____	_____	_____	_____	_____	_____
Overall	_____	_____	_____	_____	_____	_____

Suggestion

.....

.....

Thankyou

Appendix D

Data of soft yogurt candy during storage

Table 1 Effect of packaging materials and storage temperatures on the physical quality of soft yogurt candy during 3 months storage period

Packaging materials	Storage temperatures (°C)	Storage time (weeks)	Physical characteristics			
			a_w	L*	a*	b*
Aluminium foil	30	0	0.48±0.01	78.55±0.68	0.16±0.12	15.22±0.14
		2	0.49±0.01	82.57±0.77	-0.82±0.24	15.59±0.20
		4	0.51±0.01	78.08±2.26	-0.86±0.35	15.78±0.17
		6	0.50±0.01	80.42±0.77	-1.47±0.31	14.82±0.22
		8	0.50±0.01	80.00±0.77	-0.73±0.02	15.52±0.12
		10	0.49±0.01	82.03±0.72	-0.25±0.08	16.50±0.22
		12	0.49±0.01	77.84±1.17	-0.19±0.13	17.50±0.52
Aluminium foil	45	0	0.54±0.01	77.91±0.70	0.23±0.27	16.06±0.13
		2	0.57±0.01	75.19±0.26	-0.34±0.30	18.58±0.27
		4	0.57±0.01	79.04±0.33	0.26±0.12	18.90±0.30
		6	0.57±0.01	74.94±1.24	1.38±0.14	23.93±0.45
		8	0.58±0.01	75.80±2.77	2.69±0.33	26.07±1.14
		10	0.58±0.01	73.91±0.70	2.67±0.31	23.24±1.37
		12	0.58±0.01	66.84±0.20	2.63±0.14	26.41±3.14
Laminated	30	0	0.51±0.01	78.76±0.30	-0.14±0.12	14.65±0.65
		2	0.56±0.01	82.71±1.06	-0.35±0.03	15.72±0.07
		4	0.58±0.01	75.36±0.21	-0.58±0.19	15.78±0.10
		6	0.63±0.01	79.01±1.69	-0.92±0.02	14.38±0.92
		8	0.64±0.01	79.16±1.42	-0.12±0.11	15.85±1.23
		10	0.65±0.01	82.90±0.42	-0.60±0.25	16.83±0.14
		12	0.65±0.01	80.18±0.59	-0.67±0.21	16.83±0.43

Table 1 (Continued)

Packaging materials	Storage temperatures (°C)	Storage time (weeks)	Physical characteristics			
			a_w	L*	a*	b*
Laminated	45	0	0.53±0.01	78.60±0.84	0.07±0.03	15.28±0.44
		2	0.51±0.01	79.15±0.36	0.08±0.30	18.83±0.59
		4	0.49±0.01	76.11±0.92	0.55±0.37	19.77±0.48
		6	0.47±0.02	81.84±0.65	0.19±0.20	18.51±0.07
		8	0.47±0.02	82.53±0.22	0.68±0.19	18.87±0.33
		10	0.46±0.01	77.13±0.61	1.79±0.11	17.73±0.46
		12	0.45±0.01	83.26±0.08	2.18±0.36	21.92±0.24
OPP	30	0	0.52±0.01	78.02±1.19	-0.03±0.13	14.74±0.62
		2	0.61±0.02	76.95±0.71	-0.78±0.12	15.49±0.41
		4	0.65±0.01	78.89±0.74	-0.80±0.02	15.63±0.30
		6	0.65±0.01	81.04±2.86	-1.09±0.24	15.20±1.35
		8	0.67±0.01	84.25±0.50	-1.52±0.09	16.22±0.11
		10	0.67±0.01	83.67±0.78	-1.93±0.31	17.05±0.14
		12	0.67±0.01	77.76±1.68	-0.62±0.18	17.71±0.09
OPP	45	0	0.54±0.01	78.22±0.51	0.29±0.04	15.53±0.26
		2	0.52±0.01	80.11±1.08	-0.13±0.21	18.75±0.28
		4	0.51±0.01	78.10±0.60	0.11±0.04	17.79±1.52
		6	0.49±0.02	80.38±1.71	0.46±0.37	20.20±0.57
		8	0.49±0.01	80.83±0.38	1.03±0.06	21.49±0.19
		10	0.49±0.01	79.42±1.94	1.26±0.23	20.51±0.32
		12	0.46±0.01	78.09±1.56	1.25±0.270	20.47±0.13

Table 2 Effect of packaging materials and storage temperatures on total acidity, total soluble solid, moisture content and total solid of soft yogurt candy during 3 months storage period

Packaging materials	Storage temperatures (°C)	Storage time (weeks)	Chemical characterstics			
			Total acidity (% as lactic)	Total soluble solid (% Brix)	Moisture content (%)	Total solid (%)
Aluminium foil	30	0	0.23±0.03	86.66±0.99	9.14±0.02	90.85±0.02
		2	0.24±0.01	88.33±0.99	9.02±0.03	90.98±0.03
		4	0.22±0.01	88.58±1.53	9.17±0.02	90.83±0.02
		6	0.21±0.03	88.26±0.58	9.08±0.10	90.92±0.10
		8	0.24±0.01	87.83±1.52	9.19±0.03	90.81±0.03
		10	0.22±0.01	88.28±0.58	9.12±0.03	90.88±0.03
		12	0.23±0.01	87.05±1.15	9.27±0.03	90.73±0.03
Aluminium foil	45	0	0.23±0.01	86.42±1.96	9.37±0.09	90.63±0.09
		2	0.24±0.03	90.04±0.58	9.34±0.05	90.66±0.05
		4	0.25±0.02	86.53±0.58	9.16±0.02	90.84±0.02
		6	0.24±0.03	89.60±1.00	9.06±0.09	90.94±0.09
		8	0.26±0.01	87.60±1.51	8.96±0.04	91.04±0.04
		10	0.25±0.02	87.00±0.57	9.18±0.04	90.82±0.04
		12	0.24±0.03	83.37±0.51	9.22±0.04	90.78±0.04
Laminated	30	0	0.24±0.01	88.58±0.57	8.92±0.03	91.08±0.03
		2	0.24±0.01	87.39±0.99	8.95±0.05	91.05±0.05
		4	0.23±0.03	86.11±0.57	9.07±0.22	90.93±0.22
		6	0.20±0.02	86.36±1.51	9.15±0.03	90.85±0.03
		8	0.26±0.01	85.89±0.56	9.05±0.04	90.95±0.04
		10	0.24±0.01	85.96±0.99	8.95±0.12	91.05±0.12
		12	0.22±0.01	82.28±0.54	9.36±0.01	90.64±0.01

Table 2 (Continued)

Packaging materials	Storage temperatures (°C)	Storage time (weeks)	Chemical characteristics			
			Total acidity (% as lactic)	Total soluble solid (% Brix)	Moisture content (%)	Total solid (%)
Laminated	45	0	0.24±0.01	87.42±0.57	9.36±0.03	90.64±0.08
		2	0.22±0.01	88.54±0.58	9.34±0.10	90.66±0.10
		4	0.26±0.01	87.47±0.57	9.59±0.02	90.41±0.02
		6	0.24±0.03	87.80±1.15	9.54±0.06	90.46±0.06
		8	0.24±0.01	86.62±0.57	9.16±0.01	90.84±0.01
		10	0.24±0.01	86.91±0.00	9.43±0.08	90.57±0.08
		12	0.24±0.01	86.92±1.50	9.27±0.01[c]	90.73±0.01
OPP	30	0	0.22±0.01	88.83±0.57	8.87±0.05	91.13±0.05
		2	0.22±0.03	87.11±0.57	8.86±0.19	91.14±0.19
		4	0.24±0.03	86.99±1.15	8.99±0.04	91.01±0.04
		6	0.23±0.02	88.43±0.58	9.08±0.03	90.92±0.03
		8	0.24±0.01	88.08±0.58	9.00±0.04	91.00±0.04
		10	0.25±0.00	87.17±0.58	9.06±0.06	90.94±0.06
		12	0.23±0.00	85.39±0.58	9.77±0.10	90.23±0.10
OPP	45	0	0.25±0.02	86.49±1.51	9.21±0.03	90.78±0.03
		2	0.25±0.02	87.11±1.15	9.51±0.06	90.49±0.06
		4	0.25±0.02	88.43±0.99	9.67±0.02	90.33±0.02
		6	0.24±0.03	87.27±0.57	9.47±0.06	90.53±0.06
		8	0.25±0.02	87.81±0.57	9.03±0.04	90.97±0.04
		10	0.24±0.01	89.62±0.00	9.42±0.02	90.58±0.02
		12	0.26±0.01	88.48±0.56	9.26±0.03	90.74±0.03

Table 3 Effect of packaging materials and storage temperatures on sugar contents of soft yogurt candy during 3 months storage period

Packaging materials	Storage temperatures (°C)	Storage time (weeks)	Chemical characteristics			
			Reducing before inversion (g/100g)	Reducing after inversion (g/100g)	Total sugar (g/100g)	Sucrose (g/100g)
Aluminium foil	30	0	15.59±0.10	57.27±0.47	55.18±0.45	39.59±0.42
		2	15.42±0.40	55.04±0.39	53.06±0.37	37.64±0.56
		4	15.07±0.38	54.26±0.58	52.30±0.56	37.23±0.42
		6	15.65±0.55	56.23±1.16	54.20±1.08	38.55±1.56
		8	15.44±0.14	57.50±0.57	55.40±0.55	39.96±0.43
		10	15.52±0.49	55.73±0.49	53.72±0.46	38.20±0.50
		12	15.59±0.20	55.67±0.60	53.66±0.57	38.07±0.66
Aluminium foil	45	0	15.50±0.38	56.82±1.21	54.76±1.13	39.26±1.48
		2	14.88±0.10	54.39±0.49	52.41±0.47	37.53±0.51
		4	14.26±0.24	54.52±2.14	52.51±2.03	38.25±2.07
		6	15.55±0.12	56.56±0.68	54.51±0.65	38.97±0.58
		8	15.57±0.37	57.81±0.26	55.70±0.23	40.14±0.55
		10	15.35±0.20	56.65±0.94	54.59±0.91	39.25±0.71
		12	15.67±0.13	58.20±0.47	56.08±0.44	40.41±0.48
Laminated	30	0	15.55±0.10	57.74±1.04	55.63±0.99	40.09±0.95
		2	15.08±0.11	54.78±0.25	52.80±0.24	37.72±0.28
		4	14.86±0.39	54.19±0.69	52.23±0.67	37.37±0.43
		6	15.12±0.44	56.64±0.30	54.57±0.30	39.45±0.30
		8	15.47±0.21	55.74±0.65	53.73±0.62	38.26±0.49
		10	15.05±0.85	55.26±0.79	53.25±0.77	38.20±0.82
		12	15.57±0.17	55.67±0.60	53.66±0.58	38.09±0.44

Table 3 (Continued)

Packaging materials	Storage temperatures (°C)	Storage time (weeks)	Chemical charecteristics			
			Reducing before inversion (g/100g)	Reducing after inversion (g/100g)	Total sugar (g/100g)	Sucrose (g/100g)
Laminated	45	0	15.56±0.12	57.43±0.53	55.33±0.51	39.77±0.50
		2	15.20±0.12	55.17±0.44	53.17±0.42	37.98±0.52
		4	13.79±1.03	56.06±1.12	53.94±1.05	40.15±1.68
		6	15.52±0.17	57.58±0.53	55.48±0.51	39.96±0.39
		8	15.63±0.10	56.03±0.40	54.96±0.39	39.33±0.36
		10	15.49±0.08	57.19±0.57	55.10±0.54	39.61±0.58
		12	15.76±0.23	59.27±3.15	57.10±3.00	41.34±2.78
OPP	30	0	15.58±0.12	57.35±0.40	55.26±0.38	39.68±0.49
		2	15.04±0.5	54.39±0.58	52.42±0.55	37.38±0.53
		4	14.70±0.30	54.45±0.50	52.47±0.47	37.76±0.59
		6	15.33±0.09	54.39±0.58	52.43±0.55	37.11±0.54
		8	15.41±0.14	56.37±1.11	54.32±1.06	38.91±0.92
		10	15.28±0.30	57.47±2.66	55.36±2.52	40.07±2.72
		12	15.52±0.10	55.83±1.01	53.82±0.96	38.30±0.88
OPP	45	0	15.58±0.07	57.42±0.30	55.33±0.29	39.76±0.26
		2	15.09±0.09	54.52±0.44	52.55±0.42	37.46±0.41
		4	14.49±0.11	54.26±0.72	52.27±0.68	37.78±0.74
		6	16.03±0.63	57.58±0.30	55.50±0.31	39.48±0.47
		8	15.60±0.10	58.05±0.30	55.95±0.29	40.32±0.23
		10	15.51±0.31	56.88±0.85	54.81±0.79	39.30±1.09
		12	15.70±0.27	58.70±1.46	56.55±1.40	40.85±1.21

Appendix E

Statistical analysis

Statistical data

1 Production of soft yogurt candy prototype
1.1 Proximate analysis
1.1.1 Moisture content

ANALYSIS OF VARIANCE TABLE FOR MOIS

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.09863	0.04931	9.70	0.0132
REP (B)					
A*B	6	0.03051	0.00509		
TOTAL	8	0.12914			

LSD (T) COMPARISON OF MEANS OF MOIS BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	9.3834	I
1	9.2331	.. I
2	9.1284	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.1425
STANDARD ERROR FOR COMPARISON 0.0582
ERROR TERM USED: TR*REP, 6 DF

1.1.2 Protein

ANALYSIS OF VARIANCE TABLE FOR PROTEIN

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.00569	0.00284	3.76	0.0872
REP (B)					
A*B	6	0.00453	7.556E-04		
TOTAL	8	0.01022			

1.1.3 Fat

ANALYSIS OF VARIANCE TABLE FOR FAT

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.08410	0.04205	2.53	0.1601
REP (B)					
A*B	6	0.09992	0.01665		
TOTAL	8	0.18402			

1.1.4 Ash

ANALYSIS OF VARIANCE TABLE FOR ASH

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.00287	0.00143	1.11	0.3886
REP (B)					
A*B	6	0.00775	0.00129		
TOTAL	8	0.01062			

1.1.5 Carbohydrate

NALYSIS OF VARIANCE TABLE FOR CARBOHYDR

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.06482	0.03241	1.65	0.2694
REP (B)					
A*B	6	0.11820	0.01970		
TOTAL	8	0.18302			

1.2 Physical analysis

1.2.1 a_W

ANALYSIS OF VARIANCE TABLE FOR AW

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.01760	0.00880	9.24	0.0147
REP (B)					
A*B	6	0.00571	9.520E-04		
TOTAL	8	0.02331			

LSD (T) COMPARISON OF MEANS OF AW BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	0.6373	I
1	0.6003	I
2	0.5307	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.0616
STANDARD ERROR FOR COMPARISON 0.0252
ERROR TERM USED: TR*REP, 6 DF

1.2.2 L*

ANALYSIS OF VARIANCE TABLE FOR L

SOURCE	DF	SS	MS	F	P
TR (A)	2	23.2865	11.6432	22.66	0.0016
REP (B)					
A*B	6	3.08313	0.51386		
TOTAL	8	26.3696			

LSD (T) COMPARISON OF MEANS OF L BY TR

TR	MEAN	HOMOGENEOUS GROUPS
1	80.157	I
3	79.470	I
2	76.453	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 1.4322
STANDARD ERROR FOR COMPARISON 0.5853
ERROR TERM USED: TR*REP, 6 DF

1.2.3 a*

ANALYSIS OF VARIANCE TABLE FOR A

SOURCE	DF	SS	MS	F	P
TR (A)	2	1.08669	0.54334	79.64	0.0000
REP (B)					
A*B	6	0.04093	0.00682		
TOTAL	8	1.12762			

LSD (T) COMPARISON OF MEANS OF A BY TR

TR	MEAN	HOMOGENEOUS GROUPS
2	0.4667	I
1	0.0800	.. I
3	-0.3833	 I

ALL 3 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.1650
STANDARD ERROR FOR COMPARISON 0.0674
ERROR TERM USED: TR*REP, 6 DF

1.2.4 b*

ANALYSIS OF VARIANCE TABLE FOR B

SOURCE	DF	SS	MS	F	P
TR (A)	2	2.72180	1.36090	6.67	0.0299
REP (B)					
A*B	6	1.22420	0.20403		
TOTAL	8	3.94600			

LSD (T) COMPARISON OF MEANS OF B BY TR

TR	MEAN	HOMOGENEOUS GROUPS
2	17.720	I
3	17.240	I I
1	16.390	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.9025
STANDARD ERROR FOR COMPARISON 0.3688
ERROR TERM USED: TR*REP, 6 DF

1.3 Chemical analysis

1.3.1 Total acidity

ANALYSIS OF VARIANCE TABLE FOR ACID

SOURCE	DF	SS	MS	F	P
TR (A)	2	2.889E-04	1.444E-04	2.17	0.1958
REP (B)					
A*B	6	4.000E-04	6.667E-05		
TOTAL	8	6.889E-04			

1.3.2 Total solid

ANALYSIS OF VARIANCE TABLE FOR TS

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.09863	0.04931	9.70	0.0132
REP (B)					
A*B	6	0.03051	0.00509		
TOTAL	8	0.12914			

LSD (T) COMPARISON OF MEANS OF TS BY TR

TR	MEAN	HOMOGENEOUS GROUPS
2	90.872	I
1	90.767	I
3	90.617	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.1425
STANDARD ERROR FOR COMPARISON 0.0582
ERROR TERM USED: TR*REP, 6 DF

1.3.3 Moisture content

ANALYSIS OF VARIANCE TABLE FOR MOIS

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.09863	0.04931	9.70	0.0132
REP (B)					
A*B	6	0.03051	0.00509		
TOTAL	8	0.12914			

LSD (T) COMPARISON OF MEANS OF MOIS BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	9.3834	I
1	9.2331	.. I
2	9.1284	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.1425
STANDARD ERROR FOR COMPARISON 0.0582
ERROR TERM USED: TR*REP, 6 DF

1.3.4 Total soluble solids

ANALYSIS OF VARIANCE TABLE FOR TSS

SOURCE	DF	SS	MS	F	P
TR (A)	2	9.20223	4.60111	15.01	0.0046
REP (B)					
A*B	6	1.83980	0.30663		
TOTAL	8	11.0420			

LSD (T) COMPARISON OF MEANS OF TSS BY TR

TR	MEAN	HOMOGENEOUS GROUPS
1	88.956	I
3	88.714	I
2	86.700	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 1.1063
STANDARD ERROR FOR COMPARISON 0.4521
ERROR TERM USED: TR*REP, 6 DF

1.3.5 Reducing sugar before inversion (D1)

ANALYSIS OF VARIANCE TABLE FOR D1

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.08660	0.04330	7.69	0.0221
REP (B)					
A*B	6	0.03380	0.00563		
TOTAL	8	0.12040			

LSD (T) COMPARISON OF MEANS OF D1 BY TR

TR	MEAN	HOMOGENEOUS GROUPS
1	15.583	I
2	15.473	I I
3	15.343	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.1500
STANDARD ERROR FOR COMPARISON 0.0613
ERROR TERM USED: TR*REP, 6 DF

1.3.6 Reducing sugar after inversion (D2)

ANALYSIS OF VARIANCE TABLE FOR D2

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.42696	0.21348	1.89	0.2309
REP (B)					
A*B	6	0.67760	0.11293		
TOTAL	8	1.10456			

1.3.7 Sucrose

ANALYSIS OF VARIANCE TABLE FOR SUCROSE

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.72240	0.36120	3.05	0.1217
REP (B)					
A*B	6	0.70960	0.11827		
TOTAL	8	1.43200			

1.3.8 Total sugars

ANALYSIS OF VARIANCE TABLE FOR TOALSUGAR

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.37576	0.18788	1.87	0.2343
REP (B)					
A*B	6	0.60393	0.10066		
TOTAL	8	0.97969			

1.4 Sensory evaluation

1.4.1 Color

ANALYSIS OF VARIANCE TABLE FOR COLOR

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.55148	0.27574	9.36	0.0002
BL (B)	10	1.56208	0.15621	5.30	0.0000
REP (C)					
A*B*C	79	2.32675	0.02945		
TOTAL	91	4.44031			

LSD (T) COMPARISON OF MEANS OF COLOR BY TR

TR	MEAN	HOMOGENEOUS GROUPS
1	1.1313	I
2	1.0426	.. I
3	0.9485	 I

ALL 3 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.990 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.0841
STANDARD ERROR FOR COMPARISON 0.0422
ERROR TERM USED: TR*BL*REP, 79 DF

1.4.2 Flavor

ANALYSIS OF VARIANCE TABLE FOR SMELL

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.06226	0.03113	0.91	0.4084
BL (B)	10	1.87116	0.18712	5.44	0.0000
REP (C)					
A*B*C	82	2.81977	0.03439		
TOTAL	94	4.75320			

1.4.3 Sweetness

ANALYSIS OF VARIANCE TABLE FOR SWEET

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.03477	0.01739	0.55	0.5768
BL (B)	10	2.51591	0.25159	8.01	0.0000
REP (C)					
A*B*C	86	2.69999	0.03140		
TOTAL	98	5.25067			

1.4.4 Saltiness

ANALYSIS OF VARIANCE TABLE FOR SALTY

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.25448	0.12724	2.67	0.0747
BL (B)	10	3.00453	0.30045	6.31	0.0000
REP (C)					
A*B*C	86	4.09303	0.04759		
TOTAL	98	7.35204			

1.4.5 Hardness

ANALYSIS OF VARIANCE TABLE FOR HARDNESS

SOURCE	DF	SS	MS	F	P
TR (A)	2	1.84843	0.92422	14.41	0.0000
BL (B)	10	2.86310	0.28631	4.46	0.0001
REP (C)					
A*B*C	66	4.23274	0.06413		
TOTAL	78	8.94426			

LSD (T) COMPARISON OF MEANS OF HARDNESS BY TR

TR	MEAN	HOMOGENEOUS GROUPS
1	1.4856	I
2	1.3557	.. I
3	1.1535	 I

ALL 3 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.997 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.1245
STANDARD ERROR FOR COMPARISON 0.0623
ERROR TERM USED: TR*BL*REP, 66 DF

1.4.6 Stickiness

ANALYSIS OF VARIANCE TABLE FOR ADHESIVE

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.02286	0.01143	0.07	0.9352
BL (B)	10	10.4602	1.04602	6.14	0.0000
REP (C)					
A*B*C	86	14.6607	0.17047		
TOTAL	98	25.1438			

1.4.7 Chewiness

ANALYSIS OF VARIANCE TABLE FOR CHEWY

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.87090	0.43545	10.36	0.0001
BL (B)	10	3.02293	0.30229	7.19	0.0000
REP (C)					
A*B*C	70	2.94276	0.04204		
TOTAL	82	6.83659			

LSD (T) COMPARISON OF MEANS OF CHEWY BY TR

TR	MEAN	HOMOGENEOUS GROUPS
1	1.3900	I
2	1.2900	I
3	1.1609	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.994 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.1007
STANDARD ERROR FOR COMPARISON 0.0505
ERROR TERM USED: TR*BL*REP, 70 DF

1.4.8 Overall acceptance

ANALYSIS OF VARIANCE TABLE FOR OVERALL

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.21656	0.10828	7.55	0.0010
BL (B)	10	1.17105	0.11710	8.17	0.0000
REP (C)					
A*B*C	86	1.23293	0.01434		
TOTAL	98	2.62054			

2.Effect of sugar alcohols on the soft yogurt candy quality

2.1 Physical analysis

2.1.1 a_W

ANALYSIS OF VARIANCE TABLE FOR AW

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.01741	0.00870	33.86	0.0005
REP (B)					
A*B	6	0.00154	2.570E-04		
TOTAL	8	0.01895			

LSD (T) COMPARISON OF MEANS OF AW BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	0.6067	I
1	0.5333	.. I
2	0.5017	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.0320
STANDARD ERROR FOR COMPARISON 0.0131
ERROR TERM USED: TR*REP, 6 DF

2.1.2 L*

ANALYSIS OF VARIANCE TABLE FOR L

SOURCE	DF	SS	MS	F	P
TR (A)	2	206.243	103.122	143.72	0.0000
REP (B)					
A*B	6	4.30520	0.71753		
TOTAL	8	210.548			

LSD (T) COMPARISON OF MEANS OF L BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	77.307	I
1	73.113	.. I
2	65.727	 I

ALL 3 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 1.6924
STANDARD ERROR FOR COMPARISON 0.6916
ERROR TERM USED: TR*REP, 6 DF

2.1.3 a*

ANALYSIS OF VARIANCE TABLE FOR A

SOURCE	DF	SS	MS	F	P
TR (A)	2	21.5457	10.7728	44.69	0.0002
REP (B)					
A*B	6	1.44647	0.24108		
TOTAL	8	22.9922			

LSD (T) COMPARISON OF MEANS OF A BY TR

TR	MEAN	HOMOGENEOUS GROUPS
2	3.1800	I
3	0.4800	.. I
1	-0.4733	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.9810
STANDARD ERROR FOR COMPARISON 0.4009
ERROR TERM USED: TR*REP, 6 DF

2.1.4 b*

ANALYSIS OF VARIANCE TABLE FOR B

SOURCE	DF	SS	MS	F	P
TR (A)	2	51.3965	25.6982	148.64	0.0000
REP (B)					
A*B	6	1.03733	0.17289		
TOTAL	8	52.4338			

LSD (T) COMPARISON OF MEANS OF B BY TR

TR	MEAN	HOMOGENEOUS GROUPS
2	21.563	I
3	18.260	.. I
1	15.727	 I

ALL 3 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.8307
STANDARD ERROR FOR COMPARISON 0.3395
ERROR TERM USED: TR*REP, 6 DF

2.2 Chemical analysis

2.2.1 Total acidity

ANALYSIS OF VARIANCE TABLE FOR ACID

SOURCE	DF	SS	MS	F	P
TR (A)	2	3.042E-04	1.521E-04	3.54	0.0966
REP (B)					
A*B	6	2.580E-04	4.300E-05		
TOTAL	8	5.622E-04			

2.2.2 Total solids

ANALYSIS OF VARIANCE TABLE FOR TS

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.01242	0.00621	2.16	0.1970
REP (B)					
A*B	6	0.01728	0.00288		
TOTAL	8	0.02970			

2.2.3 Moisture content

ANALYSIS OF VARIANCE TABLE FOR MOIS

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.01242	0.00621	2.16	0.1970
REP (B)					
A*B	6	0.01728	0.00288		
TOTAL	8	0.02970			

2.2.4 Total soluble solids

ANALYSIS OF VARIANCE TABLE FOR TSS

SOURCE	DF	SS	MS	F	P
TR (A)	2	29.9200	14.9600	3.87	0.0833
REP (B)					
A*B	6	23.2060	3.86766		
TOTAL	8	53.1260			

2.2.5 Reducing sugar before inversion

ANALYSIS OF VARIANCE TABLE FOR D1

SOURCE	DF	SS	MS	F	P
TR (A)	2	2.57487	1.28743	69.26	0.0001
REP (B)					
A*B	6	0.11153	0.01859		
TOTAL	8	2.68640			

LSD (T) COMPARISON OF MEANS OF D1 BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	15.387	I
2	14.493	.. I
1	14.110	 I

ALL 3 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.2724
STANDARD ERROR FOR COMPARISON 0.1113
ERROR TERM USED: TR*REP, 6 DF

2.2.6 Reducing sugar after inversion

ANALYSIS OF VARIANCE TABLE FOR D2

SOURCE	DF	SS	MS	F	P
TR (A)	2	1102.95	551.474	9703.36	0.0000
REP (B)					
A*B	6	0.34100	0.05683		
TOTAL	8	1103.29			

LSD (T) COMPARISON OF MEANS OF D2 BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	56.353	I
2	40.257	.. I
1	29.407	 I

ALL 3 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.4763
STANDARD ERROR FOR COMPARISON 0.1947
ERROR TERM USED: TR*REP, 6 DF

2.2.7 Sucrose

ANALYSIS OF VARIANCE TABLE FOR SUCROSE

SOURCE	DF	SS	MS	F	P
TR (A)	2	902.448	451.224	7868.66	0.0000
REP (B)					
A*B	6	0.34407	0.05734		
TOTAL	8	902.792			

LSD (T) COMPARISON OF MEANS OF SUCROSE BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	38.920	I
2	24.473	.. I
1	14.530	 I

ALL 3 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.4784
STANDARD ERROR FOR COMPARISON 0.1955
ERROR TERM USED: TR*REP, 6 DF

2.2.8 Total sugars

ANALYSIS OF VARIANCE TABLE FOR TOALSUGAR

SOURCE	DF	SS	MS	F	P
TR (A)	2	1000.73	500.367	9290.90	0.0000
REP (B)					
A*B	6	0.32313	0.05386		
TOTAL	8	1001.06			

LSD (T) COMPARISON OF MEANS OF TOALSUGAR BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	54.307	I
2	38.967	.. I
1	28.640	 I

ALL 3 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.4636
STANDARD ERROR FOR COMPARISON 0.1895
ERROR TERM USED: TR*REP, 6 DF

3.Effect of honey on the soft yogurt candy quality

3.1 Physical analysis

3.1.1 a_w

ANALYSIS OF VARIANCE TABLE FOR AW

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.00467	0.00234	3.66	0.0914
REP (B)					
A*B	6	0.00383	6.386E-04		
TOTAL	8	0.00850			

3.1.2 L*

ANALYSIS OF VARIANCE TABLE FOR L

SOURCE	DF	SS	MS	F	P
TR (A)	2	104.387	52.1936	149.29	0.0000
REP (B)					
A*B	6	2.09773	0.34962		
TOTAL	8	106.485			

LSD (T) COMPARISON OF MEANS OF L BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	80.480	I
2	76.757	.. I
1	72.153	 I

ALL 3 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 1.1813
STANDARD ERROR FOR COMPARISON 0.4828
ERROR TERM USED: TR*REP, 6 DF

3.1.3 a*

ANALYSIS OF VARIANCE TABLE FOR A

SOURCE	DF	SS	MS	F	P
TR (A)	2	16.8854	8.44268	1566.68	0.0000
REP (B)					
A*B	6	0.03233	0.00539		
TOTAL	8	16.9177			

LSD (T) COMPARISON OF MEANS OF A BY TR

TR	MEAN	HOMOGENEOUS GROUPS
1	3.3167	I
2	0.9700	.. I
3	0.0667	 I

ALL 3 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.1467
STANDARD ERROR FOR COMPARISON 0.0599
ERROR TERM USED: TR*REP, 6 DF

3.1.4 b*

ANALYSIS OF VARIANCE TABLE FOR B

SOURCE	DF	SS	MS	F	P
TR (A)	2	81.4375	40.7187	125.90	0.0000
REP (B)					
A*B	6	1.94060	0.32343		
TOTAL	8	83.3781			

LSD (T) COMPARISON OF MEANS OF B BY TR

TR	MEAN	HOMOGENEOUS GROUPS
1	24.077	I
2	18.883	.. I
3	16.953	 I

ALL 3 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 1.1362
STANDARD ERROR FOR COMPARISON 0.4644
ERROR TERM USED: TR*REP, 6 DF

3.2 Chemical analysis

3.2.1 Total acidity

ANALYSIS OF VARIANCE TABLE FOR ACID

SOURCE	DF	SS	MS	F	P
TR (A)	2	8.667E-04	4.333E-04	2.79	0.1394
REP (B)					
A*B	6	9.333E-04	1.556E-04		
TOTAL	8	0.00180			

3.2.2 Total solids

ANALYSIS OF VARIANCE TABLE FOR TS

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.06084	0.03042	4.49	0.0643
REP (B)					
A*B	6	0.04067	0.00678		
TOTAL	8	0.10151			

3.2.3 Moisture content

ANALYSIS OF VARIANCE TABLE FOR MOIS

SOURCE	DF	SS	MS	F	P
TR (A)	2	0.06084	0.03042	4.49	0.0643
REP (B)					
A*B	6	0.04067	0.00678		
TOTAL	8	0.10151			

3.2.4 Total soluble solids

ANALYSIS OF VARIANCE TABLE FOR TSS

SOURCE	DF	SS	MS	F	P
TR (A)	2	4.04100	2.02050	5.77	0.0401
REP (B)					
A*B	6	2.10199	0.35033		
TOTAL	8	6.14299			

LSD (T) COMPARISON OF MEANS OF TSS BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	88.866	I
1	87.888	I I
2	87.236	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 1.1825
STANDARD ERROR FOR COMPARISON 0.4833
ERROR TERM USED: TR*REP, 6 DF

3.2.5 Reducing sugar before inversion

ANALYSIS OF VARIANCE TABLE FOR D1

SOURCE	DF	SS	MS	F	P
TR (A)	2	584.616	292.308	10698.55	0.0000
REP (B)					
A*B	6	0.16393	0.02732		
TOTAL	8	584.780			

LSD (T) COMPARISON OF MEANS OF D1 BY TR

TR	MEAN	HOMOGENEOUS GROUPS
1	35.153	I
2	26.217	.. I
3	15.440	 I

ALL 3 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.3302
STANDARD ERROR FOR COMPARISON 0.1350
ERROR TERM USED: TR*REP, 6 DF

3.2.6 Reducing sugar after inversion

ANALYSIS OF VARIANCE TABLE FOR D2

SOURCE	DF	SS	MS	F	P
TR (A)	2	44.5038	22.2519	48.43	0.0002
REP (B)					
A*B	6	2.75660	0.45943		
TOTAL	8	47.2604			

LSD (T) COMPARISON OF MEANS OF D2 BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	56.517	I
2	55.277	I
1	51.303	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 1.3542
STANDARD ERROR FOR COMPARISON 0.5534
ERROR TERM USED: TR*REP, 6 DF

3.2.7 Sucrose

ANALYSIS OF VARIANCE TABLE FOR SUCROSE

SOURCE	DF	SS	MS	F	P
TR (A)	2	841.244	420.622	862.50	0.0000
REP (B)					
A*B	6	2.92607	0.48768		
TOTAL	8	844.170			

LSD (T) COMPARISON OF MEANS OF SUCROSE BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	39.020	I
2	27.610	.. I
1	15.343	 I

ALL 3 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 1.3952
STANDARD ERROR FOR COMPARISON 0.5702
ERROR TERM USED: TR*REP, 6 DF

3.2.8 Total sugars

ANALYSIS OF VARIANCE TABLE FOR TOALSUGAR

SOURCE	DF	SS	MS	F	P
TR (A)	2	27.1801	13.5900	32.80	0.0006
REP (B)					
A*B	6	2.48593	0.41432		
TOTAL	8	29.6660			

LSD (T) COMPARISON OF MEANS OF TOALSUGAR BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	54.460	I
2	53.823	I
1	50.497	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 2.447 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 1.2860
STANDARD ERROR FOR COMPARISON 0.5256
ERROR TERM USED: TR*REP, 6 DF

4.1 Physical analysis yogurt candy during storage

4.1.1 a_W

ANALYSIS OF VARIANCE TABLE FOR AW

SOURCE	DF	SS	MS	F	P
P (A)	2	0.02632	0.01316	11.70	0.0000
T (B)	1	0.11131	0.11131	98.97	0.0000
BL (C)	6	0.01700	0.00283	2.52	0.0251
A*B	2	0.29285	0.14642	130.19	0.0000
REP (D)					
A*B*C*D	114	0.12822	0.00112		
TOTAL	125	0.57570			

LSD (T) COMPARISON OF MEANS OF AW BY P

P	MEAN	HOMOGENEOUS GROUPS
3	0.5656	I
2	0.5421	.. I
1	0.5309	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.0145
STANDARD ERROR FOR COMPARISON 7.318E-03
ERROR TERM USED: P*T*BL*REP, 114 DF

LSD (T) COMPARISON OF MEANS OF AW BY T

T	MEAN	HOMOGENEOUS GROUPS
2	0.5760	I
1	0.5165	.. I

ALL 2 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.0118
STANDARD ERROR FOR COMPARISON 5.975E-03

ERROR TERM USED: P*T*BL*REP, 114 DF

LSD (T) COMPARISON OF MEANS OF AW BY BL

BL	MEAN	HOMOGENEOUS GROUPS
6	0.5559	I
5	0.5543	I
4	0.5515	I
3	0.5504	I
7	0.5485	I
2	0.5438	I
1	0.5192	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.0221
STANDARD ERROR FOR COMPARISON 0.0112
ERROR TERM USED: P*T*BL*REP, 114 DF

4.1.2 L*

ANALYSIS OF VARIANCE TABLE FOR L

SOURCE	DF	SS	MS	F	P
P (A)	2	151.885	75.9425	11.94	0.0000
T (B)	1	112.975	112.975	17.76	0.0001
BL (C)	6	150.168	25.0280	3.93	0.0013
A*B	2	169.209	84.6046	13.30	0.0000
REP (D)					
A*B*C*D	114	725.099	6.36052		
TOTAL	125	1309.34			

LSD (T) COMPARISON OF MEANS OF L BY P

P	MEAN	HOMOGENEOUS GROUPS
3	79.695	I
2	79.693	I
1	77.365	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 1.0902
STANDARD ERROR FOR COMPARISON 0.5503
ERROR TERM USED: P*T*BL*REP, 114 DF

LSD (T) COMPARISON OF MEANS OF L BY T

T	MEAN	HOMOGENEOUS GROUPS
2	79.865	I
1	77.971	.. I

ALL 2 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.8902
STANDARD ERROR FOR COMPARISON 0.4494
ERROR TERM USED: P*T*BL*REP, 114 DF

LSD (T) COMPARISON OF MEANS OF L BY BL

BL	MEAN	HOMOGENEOUS GROUPS
5	80.428	I
6	79.842	I I
4	79.606	I I
2	79.281	I I
1	78.342	.. I I
3	77.597	 I
7	77.328	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 1.6654
STANDARD ERROR FOR COMPARISON 0.8407
ERROR TERM USED: P*T*BL*REP, 114 DF

4.1.3 a*

ANALYSIS OF VARIANCE TABLE FOR A

SOURCE	DF	SS	MS	F	P
P (A)	2	6.71188	3.35594	7.98	0.0006
T (B)	1	80.8161	80.8161	192.21	0.0000
BL (C)	6	19.8704	3.31174	7.88	0.0000
A*B	2	2.43751	1.21875	2.90	0.0592
REP (D)					
A*B*C*D	114	47.9325	0.42046		
TOTAL	125	157.768			

LSD (T) COMPARISON OF MEANS OF A BY P

P	MEAN	HOMOGENEOUS GROUPS
1	0.3829	I
2	0.1538	I
3	-0.1793	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.2803
STANDARD ERROR FOR COMPARISON 0.1415
ERROR TERM USED: P*T*BL*REP, 114 DF

LSD (T) COMPARISON OF MEANS OF A BY T

T	MEAN	HOMOGENEOUS GROUPS
1	0.9200	I
2	-0.6817	.. I

ALL 2 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.2289
STANDARD ERROR FOR COMPARISON 0.1155
ERROR TERM USED: P*T*BL*REP, 114 DF

LSD (T) COMPARISON OF MEANS OF A BY BL

BL	MEAN	HOMOGENEOUS GROUPS
7	0.7622	I
6	0.4900	I I
5	0.3372	I I
1	0.0961	.. I I
3	-0.2206	.... I I
4	-0.2400	.... I I
2	-0.3911	 I

THERE ARE 4 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.4282
STANDARD ERROR FOR COMPARISON 0.2161
ERROR TERM USED: P*T*BL*REP, 114 DF

4.1.4 b*

ANALYSIS OF VARIANCE TABLE FOR B

SOURCE	DF	SS	MS	F	P
P (A)	2	62.2622	31.1311	13.02	0.0000
T (B)	1	526.158	526.158	220.04	0.0000
BL (C)	6	266.129	44.3549	18.55	0.0000
A*B	2	60.2060	30.1030	12.59	0.0000
REP (D)					
A*B*C*D	114	272.602	2.39125		
TOTAL	125	1187.36			

LSD (T) COMPARISON OF MEANS OF B BY P

P	MEAN	HOMOGENEOUS GROUPS
1	18.866	I
3	17.628	.. I
2	17.210	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.6685
STANDARD ERROR FOR COMPARISON 0.3374
ERROR TERM USED: P*T*BL*REP, 114 DF

LSD (T) COMPARISON OF MEANS OF B BY T

T	MEAN	HOMOGENEOUS GROUPS
1	19.945	I
2	15.858	.. I

ALL 2 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.5458
STANDARD ERROR FOR COMPARISON 0.2755
ERROR TERM USED: P*T*BL*REP, 114 DF

LSD (T) COMPARISON OF MEANS OF B BY BL

BL	MEAN	HOMOGENEOUS GROUPS
7	20.142	I
5	19.004	.. I
6	18.644	.. I I
4	17.839	.... I I
3	17.275	 I
2	17.159	 I
1	15.246	 I

THERE ARE 5 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 1.0211
STANDARD ERROR FOR COMPARISON 0.5155
ERROR TERM USED: P*T*BL*REP, 114 DF

4.2 Chemical analysis

4.2.1 Total acidity

ANALYSIS OF VARIANCE TABLE FOR ACIDS

SOURCE	DF	SS	MS	F	P
P (A)	2	3.455E-04	1.728E-04	0.45	0.6386
T (B)	1	0.00611	0.00611	15.93	0.0001
BL (C)	6	0.00477	7.942E-04	2.07	0.0621
A*B	2	4.580E-04	2.290E-04	0.60	0.5522
REP (D)					
A*B*C*D	114	0.04374	3.837E-04		
TOTAL	125	0.05542			

LSD (T) COMPARISON OF MEANS OF ACIDS BY T
T MEAN HOMOGENEOUS GROUPS
1 0.2436 I
2 0.2296 .. I
ALL 2 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 6.914E-03
STANDARD ERROR FOR COMPARISON 3.490E-03
ERROR TERM USED: P*T*BL*REP, 114 DF

4.2.2 Total solids

ANALYSIS OF VARIANCE TABLE FOR TS

SOURCE	DF	SS	MS	F	P
P (A)	2	0.11604	0.05802	1.97	0.1435
T (B)	1	1.41410	1.41410	48.13	0.0000
BL (C)	6	0.95661	0.15943	5.43	0.0001
A*B	2	0.46644	0.23322	7.94	0.0006
REP (D)					
A*B*C*D	114	3.34942	0.02938		
TOTAL	125	6.30261			

LSD (T) COMPARISON OF MEANS OF TS BY T
T MEAN HOMOGENEOUS GROUPS
2 90.901 I
1 90.689 .. I
ALL 2 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.0605
STANDARD ERROR FOR COMPARISON 0.0305
ERROR TERM USED: P*T*BL*REP, 114 DF

LSD (T) COMPARISON OF MEANS OF TS BY BL
BL MEAN HOMOGENEOUS GROUPS
5 90.936 I
1 90.854 I I
2 90.831 I I I
6 90.805 .. I I
4 90.768 .. I I
3 90.724 .... I I
7 90.644 I
THERE ARE 4 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.1132
STANDARD ERROR FOR COMPARISON 0.0571
ERROR TERM USED: P*T*BL*REP, 114 DF

4.2.3 Moisture content

ANALYSIS OF VARIANCE TABLE FOR MC

SOURCE	DF	SS	MS	F	P
P (A)	2	0.11604	0.05802	1.97	0.1435
T (B)	1	1.41410	1.41410	48.13	0.0000
BL (C)	6	0.95661	0.15943	5.43	0.0001
A*B	2	0.46644	0.23322	7.94	0.0006
REP (D)					
A*B*C*D	114	3.34942	0.02938		
TOTAL	125	6.30261			

LSD (T) COMPARISON OF MEANS OF MC BY T

T	MEAN	HOMOGENEOUS GROUPS
1	9.3114	I
2	9.0995	.. I

ALL 2 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.0605
STANDARD ERROR FOR COMPARISON 0.0305
ERROR TERM USED: P*T*BL*REP, 114 DF

LSD (T) COMPARISON OF MEANS OF MC BY BL

BL	MEAN	HOMOGENEOUS GROUPS
7	9.3556	I
3	9.2762	I I
4	9.2323	.. I I
6	9.1946	.. I I
2	9.1687	.. I I I
1	9.1464	.... I I
5	9.0643	 I

THERE ARE 4 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.1132
STANDARD ERROR FOR COMPARISON 0.0571
ERROR TERM USED: P*T*BL*REP, 114 DF

4.2.4 Total soluble solids

ANALYSIS OF VARIANCE TABLE FOR TSS

SOURCE	DF	SS	MS	F	P
P (A)	2	21.5992	10.7996	5.72	0.0043
T (B)	1	4.18002	4.18002	2.21	0.1397
BL (C)	6	73.0867	12.1811	6.45	0.0000
A*B	2	20.4684	10.2342	5.42	0.0057
REP (D)					
A*B*C*D	114	215.373	1.88924		
TOTAL	125	334.707			

LSD (T) COMPARISON OF MEANS OF TSS BY P

P	MEAN	HOMOGENEOUS GROUPS
3	87.658	I
1	87.554	I
2	86.732	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.5942
STANDARD ERROR FOR COMPARISON 0.2999
ERROR TERM USED: P*T*BL*REP, 114 DF

LSD (T) COMPARISON OF MEANS OF TSS BY BL

BL	MEAN	HOMOGENEOUS GROUPS
2	88.087	I
4	87.952	I
6	87.491	I
1	87.436	I
3	87.353	I
5	87.304	I
7	85.580	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.981 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.9076
STANDARD ERROR FOR COMPARISON 0.4582
ERROR TERM USED: P*T*BL*REP, 114 DF

4.2.5 Reducing sugar before inversion

ANALYSIS OF VARIANCE TABLE FOR D1

SOURCE	DF	SS	MS	F	P
P (A)	2	0.32819	0.16409	1.33	0.2681
T (B)	1	0.00139	0.00139	0.01	0.9157
BL (C)	6	21.7515	3.62524	29.33	0.0000
A*B	2	1.04881	0.52441	4.24	0.0161
REP (D)					
A*B*C*D	156	19.2802	0.12359		
TOTAL	167	42.4101			

LSD (T) COMPARISON OF MEANS OF D1 BY BL

BL	MEAN	HOMOGENEOUS GROUPS
7	15.635	I
1	15.556	I I
4	15.530	I I
5	15.518	I I
6	15.365	.. I
2	15.117	 I
3	14.530	 I

THERE ARE 4 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.975 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.2005
STANDARD ERROR FOR COMPARISON 0.1015
ERROR TERM USED: P*T*BL*REP, 156 DF

4.2.6 Reducing sugar after inversion

ANALYSIS OF VARIANCE TABLE FOR D2

SOURCE	DF	SS	MS	F	P
P (A)	2	1.42064	0.71032	0.54	0.5835
T (B)	1	38.6408	38.6408	29.41	0.0000
BL (C)	6	190.986	31.8310	24.22	0.0000
A*B	2	5.96007	2.98004	2.27	0.1069
REP (D)					
A*B*C*D	156	204.995	1.31407		
TOTAL	167	442.003			

LSD (T) COMPARISON OF MEANS OF D2 BY T

T	MEAN	HOMOGENEOUS GROUPS
1	56.766	I
2	55.806	.. I

ALL 2 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.975 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.3494
STANDARD ERROR FOR COMPARISON 0.1769
ERROR TERM USED: P*T*BL*REP, 156 DF

LSD (T) COMPARISON OF MEANS OF D2 BY BL

BL	MEAN	HOMOGENEOUS GROUPS
1	57.336	I
7	57.223	I
5	57.083	I I
6	56.528	.. I
4	56.495	.. I
2	54.714	 I
3	54.623	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.

CRITICAL T VALUE 1.975 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.6537
STANDARD ERROR FOR COMPARISON 0.3309
ERROR TERM USED: P*T*BL*REP, 156 DF

4.2.7 Sucrose

ANALYSIS OF VARIANCE TABLE FOR SUCROSE

SOURCE	DF	SS	MS	F	P
P (A)	2	2.78731	1.39365	1.11	0.3305
T (B)	1	35.2889	35.2889	28.23	0.0000
BL (C)	6	88.4661	14.7443	11.80	0.0000
A*B	2	2.99018	1.49509	1.20	0.3051
REP (D)					
A*B*C*D	156	194.994	1.24996		
TOTAL	167	324.526			

LSD (T) COMPARISON OF MEANS OF SUCROSE BY T

T	MEAN	HOMOGENEOUS GROUPS
1	39.375	I
2	38.458	.. I

ALL 2 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.975 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.3408
STANDARD ERROR FOR COMPARISON 0.1725
ERROR TERM USED: P*T*BL*REP, 156 DF

LSD (T) COMPARISON OF MEANS OF SUCROSE BY BL

BL	MEAN	HOMOGENEOUS GROUPS
1	39.691	I
7	39.509	I I
5	39.487	I I
6	39.105	I I
4	38.917	.. I
3	38.088	 I
2	37.617	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.975 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.6375
STANDARD ERROR FOR COMPARISON 0.3227
ERROR TERM USED: P*T*BL*REP, 156 DF

4.2.8 Total sugars

NALYSIS OF VARIANCE TABLE FOR TOTAL

SOURCE	DF	SS	MS	F	P
P (A)	2	1.21815	0.60907	0.51	0.6001
T (B)	1	34.8563	34.8563	29.32	0.0000
BL (C)	6	177.860	29.6433	24.94	0.0000
A*B	2	5.55928	2.77964	2.34	0.0999
REP (D)					
A*B*C*D	156	185.449	1.18877		
TOTAL	167	404.942			

LSD (T) COMPARISON OF MEANS OF TOTAL BY T

T	MEAN	HOMOGENEOUS GROUPS
1	54.693	I
2	53.782	.. I

ALL 2 MEANS ARE SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.975 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.3323
STANDARD ERROR FOR COMPARISON 0.1682
ERROR TERM USED: P*T*BL*REP, 156 DF

LSD (T) COMPARISON OF MEANS OF TOTAL BY BL

BL	MEAN	HOMOGENEOUS GROUPS
1	55.247	I
7	55.144	I
5	55.005	I I
6	54.470	.. I
4	54.447	.. I
2	52.734	 I
3	52.618	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.975 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.6217
STANDARD ERROR FOR COMPARISON 0.3147
ERROR TERM USED: P*T*BL*REP, 156 DF

5.1 Sensory evaluation of soft yogurt candy during storage (0 week)

5.1.1 Color

ANALYSIS OF VARIANCE TABLE FOR COLOR

SOURCE	DF	SS	MS	F	P
TR (A)	5	9.24000	1.84800	4.66	0.0004
BL (B)	49	156.187	3.18748	8.04	0.0000
A*B	245	97.0933	0.39630		
TOTAL	299	262.520			

LSD (T) COMPARISON OF MEANS OF COLOR BY TR

TR	MEAN	HOMOGENEOUS GROUPS
1	7.7600	I
6	7.6800	I I
4	7.6200	I I
3	7.5000	.. I
2	7.4600	.. I I
5	7.2200	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.970 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.2480
STANDARD ERROR FOR COMPARISON 0.1259
ERROR TERM USED: TR*BL, 245 DF

5.1.2 Flavor

ANALYSIS OF VARIANCE TABLE FOR FLAVOR

SOURCE	DF	SS	MS	F	P
TR (A)	5	15.0667	3.01333	4.00	0.0017
BL (B)	49	278.920	5.69224	7.55	0.0000
A*B	245	184.600	0.75347		
TOTAL	299	478.587			

LSD (T) COMPARISON OF MEANS OF FLAVOR BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	6.3400	I
6	6.3000	I
2	6.2800	I I
5	6.0600	I I I
4	5.9400	.. I I
1	5.7200	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.970 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.3419
STANDARD ERROR FOR COMPARISON 0.1736
ERROR TERM USED: TR*BL, 245 DF

5.1.3 Sweetness

ANALYSIS OF VARIANCE TABLE FOR SWEET

SOURCE	DF	SS	MS	F	P
TR (A)	5	1.60000	0.32000	0.67	0.6482
BL (B)	49	183.720	3.74939	7.82	0.0000
A*B	245	117.400	0.47918		
TOTAL	299	302.720			

5.1.4 Saltiness

ANALYSIS OF VARIANCE TABLE FOR SALTY

SOURCE	DF	SS	MS	F	P
TR (A)	5	3.04762	0.60952	2.22	0.0532
BL (B)	48	326.088	6.79351	24.72	0.0000
A*B	240	65.9524	0.27480		
TOTAL	293	395.088			

5.1.5 Hardness

ANALYSIS OF VARIANCE TABLE FOR HARDNESS

SOURCE	DF	SS	MS	F	P
TR (A)	5	19.1429	3.82857	3.31	0.0066
BL (B)	48	313.041	6.52168	5.63	0.0000
A*B	240	277.857	1.15774		
TOTAL	293	610.041			

LSD (T) COMPARISON OF MEANS OF HARDNESS BY TR

TR	MEAN	HOMOGENEOUS GROUPS
6	6.4286	I
4	6.3061	I I
3	6.2449	I I I
1	5.9184	.. I I I
2	5.8367	.... I I
5	5.7551	 I

THERE ARE 4 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.970 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.4282
STANDARD ERROR FOR COMPARISON 0.2174
ERROR TERM USED: TR*BL, 240 DF

5.1.6 Stikiness

ANALYSIS OF VARIANCE TABLE FOR ADHESIVEN

SOURCE	DF	SS	MS	F	P
TR (A)	5	17.0290	3.40580	3.07	0.0106
BL (B)	45	252.536	5.61192	5.06	0.0000
A*B	225	249.638	1.10950		
TOTAL	275	519.203			

LSD (T) COMPARISON OF MEANS OF ADHESIVEN BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	6.1304	I
2	5.7609	I I
6	5.7174	I I I
4	5.6739	.. I I
5	5.5435	.. I I
1	5.3043	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.971 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.4328
STANDARD ERROR FOR COMPARISON 0.2196
ERROR TERM USED: TR*BL, 225 DF

5.1.7 Chewiness

ANALYSIS OF VARIANCE TABLE FOR CHEWINESS

SOURCE	DF	SS	MS	F	P
TR (A)	5	40.7600	8.15200	6.47	0.0000
BL (B)	49	379.053	7.73578	6.14	0.0000
A*B	245	308.907	1.26084		
TOTAL	299	728.720			

LSD (T) COMPARISON OF MEANS OF CHEWINESS BY TR

TR	MEAN	HOMOGENEOUS GROUPS
3	6.2200	I
4	6.0800	I I
6	6.0000	I I
2	5.6400	.. I I
5	5.4200	 I
1	5.2000	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.970 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.4423
STANDARD ERROR FOR COMPARISON 0.2246
ERROR TERM USED: TR*BL, 245 DF

5.1.8 Overall acceptance

ANALYSIS OF VARIANCE TABLE FOR OVERALL

SOURCE	DF	SS	MS	F	P
TR (A)	5	29.3067	5.86133	6.30	0.0000
BL (B)	49	199.053	4.06231	4.36	0.0000
A*B	245	228.027	0.93072		
TOTAL	299	456.387			

LSD (T) COMPARISON OF MEANS OF OVERALL BY TR

TR	MEAN	HOMOGENEOUS GROUPS
4	6.7600	I
6	6.7200	I
3	6.6600	I
5	6.2000	.. I
2	6.0800	.. I
1	6.0200	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.970 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.3800
STANDARD ERROR FOR COMPARISON 0.1929
ERROR TERM USED: TR*BL, 245 DF

5.2 Sensory evaluation of soft yogurt candy during storage (6 weeks)

5.2.1 color

ANALYSIS OF VARIANCE TABLE FOR COLOR

SOURCE	DF	SS	MS	F	P
TR (A)	5	274.954	54.9908	44.24	0.0000
BL (B)	46	211.312	4.59374	3.70	0.0000
A*B	230	285.879	1.24295		
TOTAL	281	772.145			

LSD (T) COMPARISON OF MEANS OF COLOR BY TR

TR	MEAN	HOMOGENEOUS GROUPS
4	7.7234	I
5	7.4043	I
6	7.2766	I
2	6.1915	.. I
1	5.3617	 I
3	5.2553	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.970 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.4531
STANDARD ERROR FOR COMPARISON 0.2300
ERROR TERM USED: TR*BL, 230 DF

5.2.2 Flavor

ANALYSIS OF VARIANCE TABLE FOR FLAVOR

SOURCE	DF	SS	MS	F	P
TR (A)	5	11.6773	2.33546	2.72	0.0209
BL (B)	46	231.879	5.04086	5.86	0.0000
A*B	230	197.823	0.86010		
TOTAL	281	441.379			

LSD (T) COMPARISON OF MEANS OF FLAVOR BY TR

TR	MEAN	HOMOGENEOUS GROUPS
6	6.0851	I
4	5.7447	I I
5	5.7447	I I
1	5.6383	.. I
2	5.5319	.. I
3	5.4468	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.970 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.3769
STANDARD ERROR FOR COMPARISON 0.1913
ERROR TERM USED: TR*BL, 230 DF

5.2.3 Sweetness

ANALYSIS OF VARIANCE TABLE FOR SWEET

SOURCE	DF	SS	MS	F	P
TR (A)	5	28.7234	5.74468	4.46	0.0007
BL (B)	46	203.035	4.41381	3.43	0.0000
A*B	230	295.943	1.28671		
TOTAL	281	527.702			

LSD (T) COMPARISON OF MEANS OF SWEET BY TR

TR	MEAN	HOMOGENEOUS GROUPS
4	6.9574	I
6	6.8085	I
1	6.6383	I I
5	6.6170	I I
2	6.2979	.. I I
3	6.0000	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.970 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.4610
STANDARD ERROR FOR COMPARISON 0.2340
ERROR TERM USED: TR*BL, 230 DF

5.2.4 Saltiness

ANALYSIS OF VARIANCE TABLE FOR SALTY

SOURCE	DF	SS	MS	F	P
TR (A)	5	25.6773	5.13546	5.86	0.0000
BL (B)	46	354.213	7.70028	8.79	0.0000
A*B	230	201.489	0.87604		
TOTAL	281	581.379			

LSD (T) COMPARISON OF MEANS OF SALTY BY TR

TR	MEAN	HOMOGENEOUS GROUPS
6	6.5957	I
4	6.5532	I
1	6.5319	I
5	6.3191	I I
2	6.0213	.. I I
3	5.7872	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.970 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.3804
STANDARD ERROR FOR COMPARISON 0.1931
ERROR TERM USED: TR*BL, 230 DF

5.2.5 Hardness

ANALYSIS OF VARIANCE TABLE FOR HARDNESS

SOURCE	DF	SS	MS	F	P
TR (A)	5	76.8510	15.3702	6.55	0.0000
BL (B)	46	247.391	5.37807	2.29	0.0000
A*B	208	487.864	2.34550		
TOTAL	259	812.106			

LSD (T) COMPARISON OF MEANS OF HARDNESS BY TR

TR	MEAN	HOMOGENEOUS GROUPS
6	6.4681	I
5	6.1915	I I
1	6.0851	I I
4	5.5745	.. I I
3	5.1978	 I
2	5.0590	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.971 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.6228
STANDARD ERROR FOR COMPARISON 0.3159
ERROR TERM USED: TR*BL, 208 DF

5.2.6 Stickiness

ANALYSIS OF VARIANCE TABLE FOR ADHESIVEN

SOURCE	DF	SS	MS	F	P
TR (A)	5	26.2471	5.24942	2.31	0.0455
BL (B)	46	310.756	6.75556	2.97	0.0000
A*B	210	477.556	2.27408		
TOTAL	261	814.559			

LSD (T) COMPARISON OF MEANS OF ADHESIVEN BY TR

TR	MEAN	HOMOGENEOUS GROUPS
1	6.4598	I
4	6.0815	I I
5	6.0000	I I I
2	5.8118	.. I I
6	5.8085	.. I I
3	5.4594	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.971 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.6132
STANDARD ERROR FOR COMPARISON 0.3111
ERROR TERM USED: TR*BL, 210 DF

5.2.7 Chewiness

ANALYSIS OF VARIANCE TABLE FOR CHEWINESS

SOURCE	DF	SS	MS	F	P
TR (A)	5	168.590	33.7180	13.88	0.0000
BL (B)	46	274.595	5.96946	2.46	0.0000
A*B	216	524.567	2.42855		
TOTAL	267	967.753			

LSD (T) COMPARISON OF MEANS OF CHEWINESS BY TR

TR	MEAN	HOMOGENEOUS GROUPS
1	6.1489	I
6	6.1277	I
5	6.0213	I
4	5.9932	I
2	4.5789	.. I
3	4.3109	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.971 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.6336
STANDARD ERROR FOR COMPARISON 0.3215
ERROR TERM USED: TR*BL, 216 DF

5.2.8 Overall acceptance

ANALYSIS OF VARIANCE TABLE FOR OVERALL

SOURCE	DF	SS	MS	F	P
TR (A)	5	73.4762	14.6952	8.35	0.0000
BL (B)	46	211.313	4.59375	2.61	0.0000
A*B	219	385.272	1.75923		
TOTAL	270	670.060			

LSD (T) COMPARISON OF MEANS OF OVERALL BY TR

TR	MEAN	HOMOGENEOUS GROUPS
6	6.6809	I
4	6.5179	I
5	6.4681	I
1	6.3830	I
2	5.7089	.. I
3	5.2565	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.971 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.5392
STANDARD ERROR FOR COMPARISON 0.2736
ERROR TERM USED: TR*BL, 219 DF

5.3 Sensory evaluation of soft yogurt candy during storage (12 weeks)

5.3.1 color

ANALYSIS OF VARIANCE TABLE FOR COLOR

SOURCE	DF	SS	MS	F	P
TR (A)	5	368.254	73.6508	68.83	0.0000
BL (B)	49	125.001	2.55105	2.38	0.0000
A*B	241	257.879	1.07004		
TOTAL	295	751.135			

LSD (T) COMPARISON OF MEANS OF COLOR BY TR

TR	MEAN	HOMOGENEOUS GROUPS
4	7.4200	I
6	7.4200	I
5	7.1600	I
2	6.4000	.. I
3	6.2400	.. I
1	4.2280	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.970 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.4075
STANDARD ERROR FOR COMPARISON 0.2069
ERROR TERM USED: TR*BL, 241 DF

5.3.2 Flavor

ANALYSIS OF VARIANCE TABLE FOR FLAVOR

SOURCE	DF	SS	MS	F	P
TR (A)	5	27.9651	5.59302	2.86	0.0157
BL (B)	49	223.684	4.56499	2.34	0.0000
A*B	240	468.760	1.95317		
TOTAL	294	720.410			

LSD (T) COMPARISON OF MEANS OF FLAVOR BY TR

TR	MEAN	HOMOGENEOUS GROUPS
5	5.8400	I
4	5.8308	I
6	5.7400	I I
3	5.3600	I I I
2	5.2200	.. I I
1	5.0764	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.970 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.5506
STANDARD ERROR FOR COMPARISON 0.2795
ERROR TERM USED: TR*BL, 240 DF

5.3.3 Sweetness

ANALYSIS OF VARIANCE TABLE FOR SWEET

SOURCE	DF	SS	MS	F	P
TR (A)	5	21.8967	4.37933	3.97	0.0017
BL (B)	49	286.763	5.85231	5.31	0.0000
A*B	245	269.937	1.10178		
TOTAL	299	578.597			

LSD (T) COMPARISON OF MEANS OF SWEET BY TR

TR	MEAN	HOMOGENEOUS GROUPS
5	7.0000	I
6	7.0000	I
4	6.9000	I I
3	6.5400	.. I I
1	6.4000	 I
2	6.3800	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.970 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.4135
STANDARD ERROR FOR COMPARISON 0.2099
ERROR TERM USED: TR*BL, 245 DF

5.3.4 Saltiness

ANALYSIS OF VARIANCE TABLE FOR SALTY

SOURCE	DF	SS	MS	F	P
TR (A)	5	11.4652	2.29304	2.67	0.0229
BL (B)	48	212.796	4.43325	5.16	0.0000
A*B	235	202.047	0.85978		
TOTAL	288	426.309			

LSD (T) COMPARISON OF MEANS OF SALTY BY TR

TR	MEAN	HOMOGENEOUS GROUPS
5	6.7234	I
6	6.5776	I I
4	6.4286	I I I
3	6.3484	.. I I
1	6.2656	.. I I
2	6.1224	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.970 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.3691
STANDARD ERROR FOR COMPARISON 0.1873
ERROR TERM USED: TR*BL, 235 DF

5.3.5 Hardness

ANALYSIS OF VARIANCE TABLE FOR HARDNESS

SOURCE	DF	SS	MS	F	P
TR (A)	5	49.3794	9.87588	4.85	0.0003
BL (B)	49	192.171	3.92185	1.93	0.0008
A*B	211	429.230	2.03427		
TOTAL	265	670.781			

LSD (T) COMPARISON OF MEANS OF HARDNESS BY TR

TR	MEAN	HOMOGENEOUS GROUPS
5	6.7627	I
6	6.5400	I I
4	6.3137	I I
2	6.1000	.. I I
1	5.7200	 I
3	5.6484	 I

THERE ARE 3 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.971 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.5623
STANDARD ERROR FOR COMPARISON 0.2853
ERROR TERM USED: TR*BL, 211 DF

5.3.6 Stickiness

ANALYSIS OF VARIANCE TABLE FOR ADHESIVEN

SOURCE	DF	SS	MS	F	P
TR (A)	5	19.7639	3.95278	1.69	0.1368
BL (B)	49	107.425	2.19235	0.94	0.5900
A*B	226	527.126	2.33242		
TOTAL	280	654.315			

5.3.7 Chewiness

ANALYSIS OF VARIANCE TABLE FOR CHEWINESS

SOURCE	DF	SS	MS	F	P
TR (A)	5	162.177	32.4355	18.17	0.0000
BL (B)	49	141.449	2.88672	1.62	0.0107
A*B	220	392.809	1.78550		
TOTAL	274	696.436			

LSD (T) COMPARISON OF MEANS OF CHEWINESS BY TR

TR	MEAN	HOMOGENEOUS GROUPS
5	6.4800	I
6	6.4200	I
4	6.2153	I
1	6.1337	I
3	4.7770	.. I
2	4.7674	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.971 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.5267
STANDARD ERROR FOR COMPARISON 0.2672
ERROR TERM USED: TR*BL, 220 DF

5.3.8 Overall acceptance

ANALYSIS OF VARIANCE TABLE FOR OVERALL

SOURCE	DF	SS	MS	F	P
TR (A)	5	180.043	36.0086	22.88	0.0000
BL (B)	49	123.454	2.51946	1.60	0.0115
A*B	239	376.217	1.57413		
TOTAL	293	679.713			

LSD (T) COMPARISON OF MEANS OF OVERALL BY TR

TR	MEAN	HOMOGENEOUS GROUPS
4	6.8600	I
5	6.8000	I
6	6.7400	I
1	5.3782	.. I
2	5.3109	.. I
3	5.0956	.. I

THERE ARE 2 GROUPS IN WHICH THE MEANS ARE
NOT SIGNIFICANTLY DIFFERENT FROM ONE ANOTHER.
CRITICAL T VALUE 1.970 REJECTION LEVEL 0.050
CRITICAL VALUE FOR COMPARISON 0.4943
STANDARD ERROR FOR COMPARISON 0.2509
ERROR TERM USED: TR*BL, 239 DF

Curriculum Vitae

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