

8. LAMPIRAN

Lampiran 8.1. Syarat Mutu Es Krim (SNI 01-3713-2018)

No	Kriteria uji	Satuan	Persyaratan
1	Keadaan		
1.1	Bau	-	normal
1.2	Rasa	-	normal
2	Total padatan	fraksi massa, %	min. 31
3	Lemak	fraksi massa, %	min. 5,0
4	Protein	fraksi massa, %	min. 2,7
5	Cemaran logam berat		
5.1	Timbal (Pb)	mg/kg	maks. 0,02*
5.2	Kadmium (Cd)	mg/kg	maks. 0,05*
5.3	Timah (Sn)	mg/kg	maks. 40,0*
5.4	Merkuri (Hg)	mg/kg	maks. 0,02*
6	Cemaran arsen (As)	mg/kg	maks. 0,10*
7	Cemaran mikroba	-	lihat Tabel 2

CATATAN *)dihitung terhadap produk siap konsumsi

No	Jenis cemaran mikroba	n	c	m	M
1	<i>Enterobacteriaceae</i>	5	2	10 koloni/g	10 ² koloni/g
2	<i>Salmonella</i>	5	0	Negatif/25 g	NA
3	<i>Listeria monocytogenes</i>	5	0	10 ² koloni/g	NA

CATATAN
n adalah jumlah sampel yang diambil dan dianalisis
c adalah jumlah maksimum sampel yang boleh melampaui batas mikroba untuk menentukan keberterimaan suatu produk pangan
m, M adalah batas mikroba
NA adalah *Not applicable*

Lampiran 8.2. Lembar Penilaian Sensori

UJI RANKING HEDONIK

Es Krim Kolang-Kaling dengan Kulit Buah Naga Merah

No : _____ Tanggal : _____
 Nama : _____ No. WA : _____

Dihadapan Anda tersedia 4 sampel es krim dengan kode yang berbeda. Anda diminta untuk mencicipi sampel tersebut secara berurutan dari kiri ke kanan. Saat mencicipi sampel, biarkan es krim meleleh dengan sendirinya di dalam mulut Anda. Bilaslah mulut Anda dengan cara berkumur menggunakan air mineral yang telah disediakan untuk menetralkan rasa sebelum mencicipi sampel dan setiap akan berganti pada sampel selanjutnya. Kemudian Anda diminta untuk memberikan skor terhadap rasa, tekstur, warna, aroma, dan keseluruhan (*overall*) kepada masing-masing sampel dengan menggunakan skala sebagai berikut:

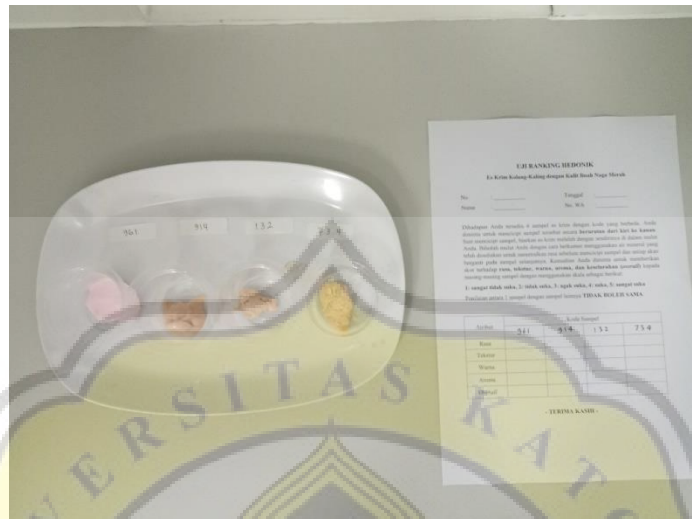
1: sangat tidak suka, 2: tidak suka, 3: agak suka, 4: suka, 5: sangat suka

Penilaian antara 1 sampel dengan sampel lainnya TIDAK BOLEH SAMA.

Atribut	Kode Sampel			
Rasa				
Tekstur				
Warna				
Aroma				
Overall				

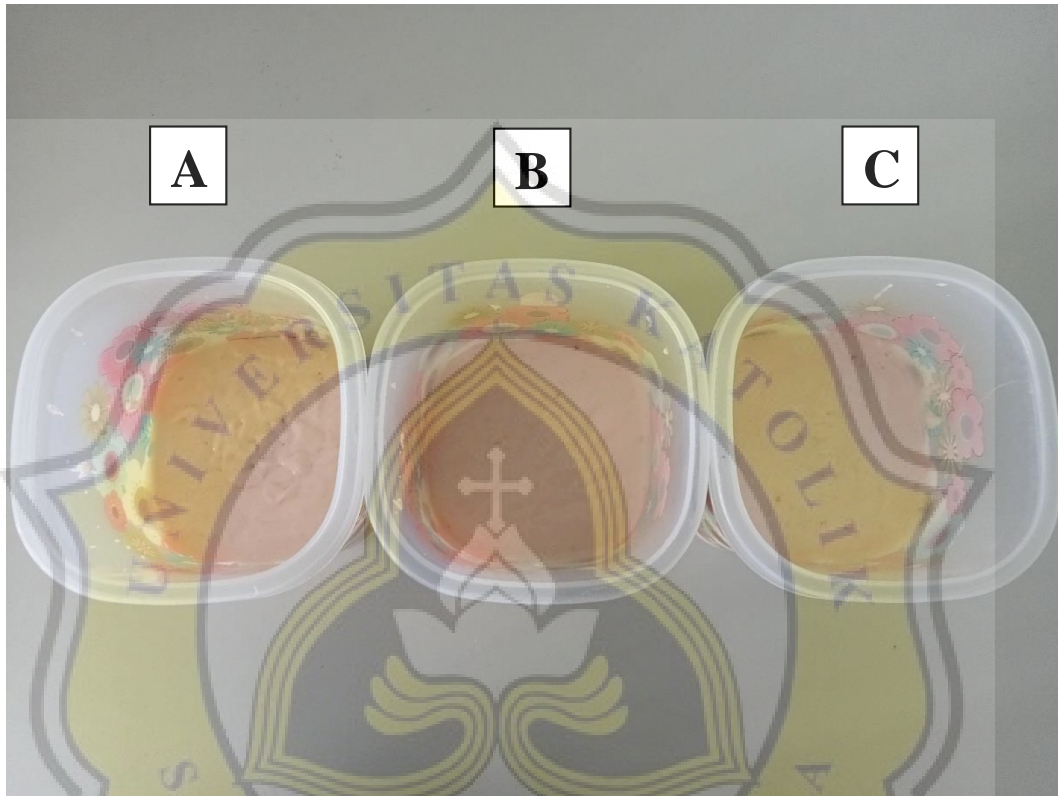
- TERIMA KASIH -

Lampiran 8.3. Dokumentasi Sensori



Lampiran 8.4. Dokumentasi Pembuatan Es Krim Kolang-Kaling

8.4.1. Es Krim Kolang-Kaling Sebelum *Freezing*



8.4.2. Es Krim Kolang-Kaling Sesudah *Freezing*



8.4.3. Analisis Fisikokimiawi Es Krim Kolang-Kaling



Lampiran 8.5. Data SPSS

8.5.1. Uji *One Way* ANOVA & Duncan (Fisik)

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Visko_bfr_freezing	Between Groups	11188324.333	2	5594162.167	5356112.713	.000
	Within Groups	15.667	15	1.044		
	Total	11188340.000	17			
Visko_aft_freezing	Between Groups	2596924.778	2	1298462.389	990352.669	.000
	Within Groups	19.667	15	1.311		
	Total	2596944.444	17			
Overrun	Between Groups	1508.056	2	754.028	1202.661	.000
	Within Groups	9.405	15	.627		
	Total	1517.461	17			
L	Between Groups	17.694	2	8.847	52.987	.000
	Within Groups	2.504	15	.167		
	Total	20.198	17			
a	Between Groups	2.392	2	1.196	32.906	.000
	Within Groups	.545	15	.036		
	Total	2.938	17			
b	Between Groups	2.330	2	1.165	5.980	.012
	Within Groups	2.922	15	.195		
	Total	5.252	17			

Kecepatan _Meleleh	Between Groups	26.994	2	13.497	39.865	.000
	Within Groups	5.079	15	.339		
	Total	32.073	17			

Viskositas_before_freezing				
Duncan ^a				
Sampel	N	Subset for alpha = 0.05		
		1	2	3
Santan kelapa 50 ml : susu krim 50 ml	6	3997.83		
Santan kelapa 25 ml : susu krim 75 ml	6		4078.17	
Santan kelapa 75 ml : susu krim 25 ml	6			5709.00
Sig.		1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 6.000.				

Viskositas_after_freezing				
Duncan ^a				
Sampel	N	Subset for alpha = 0.05		
		1	2	3
Santan kelapa 50 ml : susu krim 50 ml	6	4780.50		
Santan kelapa 25 ml : susu krim 75 ml	6		4848.67	
Santan kelapa 75 ml : susu krim 25 ml	6			5618.17
Sig.		1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 6.000.				

Overrun				
Duncan ^a				
Sampel	N	Subset for alpha = 0.05		
		1	2	3
Santan kelapa 25 ml : susu krim 75 ml	6	35.6483		
Santan kelapa 50 ml : susu krim 50 ml	6		37.0133	
Santan kelapa 75 ml : susu krim 25 ml	6			55.7117
Sig.		1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 6.000.				

L				
Duncan ^a				
Sampel	N	Subset for alpha = 0.05		
		1	2	3
Santan kelapa 50 ml : susu krim 50 ml	6	75.0167		
Santan kelapa 25 ml : susu krim 75 ml	6		75.8850	
Santan kelapa 75 ml : susu krim 25 ml	6			77.4150
Sig.		1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 6.000.				

a			
Duncan ^a			
Sampel	N	Subset for alpha = 0.05	
		1	2
Santan kelapa 25 ml : susu krim 75 ml	6	9.2733	
Santan kelapa 50 ml : susu krim 50 ml	6	9.4833	
Santan kelapa 75 ml : susu krim 25 ml	6		10.1300
Sig.		.076	1.000
Means for groups in homogeneous subsets are displayed.			
a. Uses Harmonic Mean Sample Size = 6.000.			

b			
Duncan ^a			
Sampel	N	Subset for alpha = 0.05	
		1	2
Santan kelapa 25 ml : susu krim 75 ml	6	14.8600	
Santan kelapa 75 ml : susu krim 25 ml	6	15.1467	
Santan kelapa 50 ml : susu krim 50 ml	6		15.7250
Sig.		.278	1.000
Means for groups in homogeneous subsets are displayed.			
a. Uses Harmonic Mean Sample Size = 6.000.			

Kecepatan_Meleleh				
Duncan ^a				
Sampel	N	Subset for alpha = 0.05		
		1	2	3
Santan kelapa 25 ml : susu krim 75 ml	6	31.5483		
Santan kelapa 50 ml : susu krim 50 ml	6		32.8167	
Santan kelapa 75 ml : susu krim 25 ml	6			34.5367
Sig.		1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 6.000.				

8.5.2. Uji *One Way* ANOVA & Duncan (Kimia)

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Kadar_Air	Between Groups	21.301	2	10.650	478.026	.000
	Within Groups	.334	15	.022		
	Total	21.635	17			
Total_Padatan	Between Groups	21.301	2	10.650	478.026	.000
	Within Groups	.334	15	.022		
	Total	21.635	17			
Kadar_Abu	Between Groups	.124	2	.062	1.446	.267
	Within Groups	.646	15	.043		
	Total	.770	17			
Kadar_Protein	Between Groups	4.485	2	2.243	11.319	.001

	Within Groups	2.972	15	.198		
	Total	7.458	17			
Kadar_Lemak	Between Groups	57.170	2	28.585	109.035	.000
	Within Groups	3.932	15	.262		
	Total	61.103	17			
Kadar_Karbohidrat	Between Groups	18.504	2	9.252	32.602	.000
	Within Groups	4.257	15	.284		
	Total	22.761	17			
Gula_Total	Between Groups	360.638	2	180.319	510.124	.000
	Within Groups	5.302	15	.353		
	Total	365.941	17			
Antioksidan	Between Groups	141.009	2	70.505	109.006	.000
	Within Groups	9.702	15	.647		
	Total	150.711	17			

Kadar Air				
Duncan ^a				
Sampel	N	Subset for alpha = 0.05		
		1	2	3
Santan kelapa 75 ml : susu krim 25 ml	6	60.8533		
Santan kelapa 50 ml : susu krim 50 ml	6		61.2767	
Santan kelapa 25 ml : susu krim 75 ml	6			63.3433
Sig.		1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 6.000.				

Total Padatan				
Duncan ^a				
Sampel	N	Subset for alpha = 0.05		
		1	2	3
Santan kelapa 25 ml : susu krim 75 ml	6	36.6567		
Santan kelapa 50 ml : susu krim 50 ml	6		38.7233	
Santan kelapa 75 ml : susu krim 25 ml	6			39.1467
Sig.		1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 6.000.				

Kadar Abu		
Duncan ^a		
Sampel	N	Subset for alpha = 0.05
		1
Santan kelapa 25 ml : susu krim 75 ml	6	.8767
Santan kelapa 75 ml : susu krim 25 ml	6	.9433
Santan kelapa 50 ml : susu krim 50 ml	6	1.0767
Sig.		.133
Means for groups in homogeneous subsets are displayed.		
a. Uses Harmonic Mean Sample Size = 6.000.		

Kadar Protein			
Duncan ^a			
Sampel	N	Subset for alpha = 0.05	
		1	2
Santan kelapa 50 ml : susu krim 50 ml	6	4.3417	
Santan kelapa 25 ml : susu krim 75 ml	6	4.7467	
Santan kelapa 75 ml : susu krim 25 ml	6		5.5433
Sig.		.136	1.000
Means for groups in homogeneous subsets are displayed.			
a. Uses Harmonic Mean Sample Size = 6.000.			

Kadar Lemak				
Duncan ^a				
Sampel	N	Subset for alpha = 0.05		
		1	2	3
Santan kelapa 25 ml : susu krim 75 ml	6	15.6950		
Santan kelapa 50 ml : susu krim 50 ml	6		19.0400	
Santan kelapa 75 ml : susu krim 25 ml	6			19.7967
Sig.		1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 6.000.				

Kadar_Karbohidrat				
Duncan ^a				
Sampel	N	Subset for alpha = 0.05		
		1	2	3
Santan kelapa 75 ml : susu krim 25 ml	6	12.8633		
Santan kelapa 50 ml : susu krim 50 ml	6		14.2617	
Santan kelapa 25 ml : susu krim 75 ml	6			15.3400
Sig.		1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 6.000.				

Gula_Total				
Duncan ^a				
Sampel	N	Subset for alpha = 0.05		
		1	2	3
Santan kelapa 50 ml : susu krim 50 ml	6	36.8617		
Santan kelapa 25 ml : susu krim 75 ml	6		38.1200	
Santan kelapa 75 ml : susu krim 25 ml	6			46.9233
Sig.		1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 6.000.				

Antioksidan				
Duncan ^a				
Sampel	N	Subset for alpha = 0.05		
		1	2	3
Santan kelapa 25 ml : susu krim 75 ml	6	4.1083		
Santan kelapa 50 ml : susu krim 50 ml	6		9.3833	
Santan kelapa 75 ml : susu krim 25 ml	6			10.5383
Sig.		1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 6.000.				

8.5.3. Uji Kruskal Wallis & Mann-Whitney (Sensori)

Test Statistics ^{a,b}					
	Rasa	Tekstur	Warna	Aroma	Overall
Kruskal-Wallis H	22.610	.553	53.412	35.274	24.534
df	3	3	3	3	3
Asymp. Sig.	.000	.907	.000	.000	.000
a. Kruskal Wallis Test					
b. Grouping Variable: Perlakuan					

Descriptive Statistics					
	N	Mean	Std. Deviation	Minimu m	Maximu m
Rasa	120	3.28	1.270	1	5
Tekstur	120	3.20	1.274	1	5
Warna	120	3.33	1.239	1	5
Aroma	120	3.28	1.250	1	5
Overall	120	3.37	1.229	1	5
Perlakuan	120	2.50	1.123	1	4

K vs A

Test Statistics ^a	
	Rasa
Mann-Whitney U	195.500
Wilcoxon W	660.500
Z	-3.903
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Perlakuan	

K vs B

Test Statistics ^a	
	Rasa
Mann-Whitney U	183.500
Wilcoxon W	648.500
Z	-4.068
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Perlakuan	

K vs C

Test Statistics ^a	
	Rasa
Mann-Whitney U	251.500
Wilcoxon W	716.500
Z	-3.042
Asymp. Sig. (2-tailed)	.002
a. Grouping Variable: Perlakuan	

A vs B

Test Statistics ^a	
	Rasa
Mann-Whitney U	361.000
Wilcoxon W	826.000
Z	-1.358
Asymp. Sig. (2-tailed)	.174
a. Grouping Variable: Perlakuan	

A vs C

Test Statistics ^a	
	Rasa
Mann-Whitney U	338.000
Wilcoxon W	803.000
Z	-1.699
Asymp. Sig. (2-tailed)	.089
a. Grouping Variable: Perlakuan	

B vs C

Test Statistics ^a	
	Rasa
Mann-Whitney U	394.000
Wilcoxon W	859.000
Z	-.861
Asymp. Sig. (2-tailed)	.389
a. Grouping Variable: Perlakuan	

K vs A

Test Statistics ^a	
	Warna
Mann-Whitney U	154.500
Wilcoxon W	619.500
Z	-4.658
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Perlakuan	

K vs B

Test Statistics ^a	
	Warna
Mann-Whitney U	63.000
Wilcoxon W	528.000
Z	-5.966
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Perlakuan	

K vs C

Test Statistics ^a	
	Warna
Mann-Whitney U	65.000
Wilcoxon W	530.000
Z	-5.914
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Perlakuan	

A vs B

Test Statistics ^a	
	Warna
Mann-Whitney U	250.000
Wilcoxon W	715.000
Z	-3.091
Asymp. Sig. (2-tailed)	.002
a. Grouping Variable: Perlakuan	

A vs C

Test Statistics ^a	
	Warna
Mann-Whitney U	250.000
Wilcoxon W	715.000
Z	-3.065
Asymp. Sig. (2-tailed)	.002
a. Grouping Variable: Perlakuan	

B vs C

Test Statistics ^a	
	Warna
Mann-Whitney U	415.500
Wilcoxon W	880.500
Z	-.537
Asymp. Sig. (2-tailed)	.591
a. Grouping Variable: Perlakuan	

K vs A

Test Statistics ^a	
	Aroma
Mann-Whitney U	127.500
Wilcoxon W	592.500
Z	-4.927
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Perlakuan	

K vs B

Test Statistics ^a	
	Aroma
Mann-Whitney U	117.000
Wilcoxon W	582.000
Z	-5.123
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Perlakuan	

K vs C

Test Statistics ^a	
	Aroma
Mann-Whitney U	152.000
Wilcoxon W	617.000
Z	-4.566
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Perlakuan	

A vs B

Test Statistics ^a	
	Aroma
Mann-Whitney U	417.500
Wilcoxon W	882.500
Z	-.500
Asymp. Sig. (2-tailed)	.617
a. Grouping Variable: Perlakuan	

A vs C

Test Statistics ^a	
	Aroma
Mann-Whitney U	430.000
Wilcoxon W	895.000
Z	-.304
Asymp. Sig. (2-tailed)	.761
a. Grouping Variable: Perlakuan	

B vs C

Test Statistics ^a	
	Aroma
Mann-Whitney U	439.000
Wilcoxon W	904.000
Z	-.168
Asymp. Sig. (2-tailed)	.866
a. Grouping Variable: Perlakuan	

K vs A

Test Statistics ^a	
	Overall
Mann-Whitney U	189.500
Wilcoxon W	654.500
Z	-4.002
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Perlakuan	

K vs B

Test Statistics ^a	
	Overall
Mann-Whitney U	155.000
Wilcoxon W	620.000
Z	-4.519
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Perlakuan	

K vs C

Test Statistics ^a	
	Overall
Mann-Whitney U	214.500
Wilcoxon W	679.500
Z	-3.624
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Perlakuan	

A vs B

Test Statistics ^a	
	Overall
Mann-Whitney U	441.000
Wilcoxon W	906.000
Z	-.138
Asymp. Sig. (2-tailed)	.890
a. Grouping Variable: Perlakuan	

A vs C

Test Statistics ^a	
	Overall
Mann-Whitney U	426.500
Wilcoxon W	891.500
Z	-.359
Asymp. Sig. (2-tailed)	.719
a. Grouping Variable: Perlakuan	

B vs C

Test Statistics ^a	
	Overall
Mann-Whitney U	422.500
Wilcoxon W	887.500
Z	-.420
Asymp. Sig. (2-tailed)	.674
a. Grouping Variable: Perlakuan	

8.5.4. Uji Korelasi Bivariate Pearson

		Correlations											
		Visko_before_freezing	Visko_after_freezing	Overrun	Kecepatan_Meleleh	Kadar_Air	Total_Padatan	Kadar_Abu	Kadar_Protein	Kadar_Lemak	Kadar_Karbohidrat	Gula_Total	Antioksidan
Visko_bfr_freezing	Pearson Correlation	1	.999**	.992**	.814**	-.594**	.594**	-.092	.742**	.590**	-.795**	.990**	.586*
	Sig. (2-tailed)		.000	.000	.000	.009	.009	.716	.000	.010	.000	.000	.011
	N	18	18	18	18	18	18	18	18	18	18	18	18
Visko_aft_freezing	Pearson Correlation	.999**	1	.988**	.801**	-.568*	.568*	-.106	.749**	.566*	-.782**	.992**	.562*
	Sig. (2-tailed)	.000		.000	.000	.014	.014	.677	.000	.014	.000	.000	.015
	N	18	18	18	18	18	18	18	18	18	18	18	18
Overrun	Pearson Correlation	.992**	.988**	1	.854**	-.668**	.668**	-.074	.711**	.666**	-.833**	.973**	.667**
	Sig. (2-tailed)	.000	.000		.000	.002	.002	.770	.001	.003	.000	.000	.002
	N	18	18	18	18	18	18	18	18	18	18	18	18
Kecepatan_Meleleh	Pearson Correlation	.814**	.801**	.854**	1	-.844**	.844**	-.005	.587**	.784**	-.797**	.780**	.794**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.985	.010	.000	.000	.000	.000
	N	18	18	18	18	18	18	18	18	18	18	18	18
Kadar_Air	Pearson Correlation	-.594**	-.568*	-.668**	-.844**	1	-1.000**	-.274	-.274	-.948**	.787**	-.532*	-.954**
	Sig. (2-tailed)	.009	.014	.002	.000		.000	.272	.271	.000	.000	.023	.000
	N	18	18	18	18	18	18	18	18	18	18	18	18
Total_Padatan	Pearson Correlation	.594**	.568*	.668**	.844**	-1.000**	1	.274	.274	.948**	-.787**	.532*	.954**
	Sig. (2-tailed)	.009	.014	.002	.000	.000		.272	.271	.000	.000	.023	.000
	N	18	18	18	18	18	18	18	18	18	18	18	18
Kadar_Abu	Pearson Correlation	-.092	-.106	-.074	-.005	-.274	.274	1	-.079	.156	-.130	-.115	.223
	Sig. (2-tailed)	.716	.677	.770	.985	.272	.272		.757	.535	.606	.650	.375
	N	18	18	18	18	18	18	18	18	18	18	18	18
Kadar_Protein	Pearson Correlation	.742**	.749**	.711**	.587**	-.274	.274	-.079	1	.192	-.604**	.755**	.251
	Sig. (2-tailed)	.000	.000	.001	.010	.271	.271	.757		.446	.008	.000	.315
	N	18	18	18	18	18	18	18	18	18	18	18	18
Kadar_Lemak	Pearson Correlation	.590**	.566*	.666**	.784**	-.948**	.948**	.156	.192	1	-.853**	.523*	.949**
	Sig. (2-tailed)	.010	.014	.003	.000	.000	.000	.535	.446		.000	.026	.000
	N	18	18	18	18	18	18	18	18	18	18	18	18
Kadar_Karbohidrat	Pearson Correlation	-.795**	-.782**	-.833**	-.797**	.787**	-.787**	-.130	-.604**	-.853**	1	-	-.810**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.606	.008	.000		.000	.000
	N	18	18	18	18	18	18	18	18	18	18	18	18
Total_Gula	Pearson Correlation	.990**	.992**	.973**	.780**	-.532*	.532*	-.115	.755**	.523*	-.748**	1	.532*
	Sig. (2-tailed)	.000	.000	.000	.000	.023	.023	.650	.000	.026	.000		.023
	N	18	18	18	18	18	18	18	18	18	18	18	18
Antioksidan	Pearson Correlation	.586*	.562*	.667**	.794**	-.954**	.954**	.223	.251	.949**	-.810**	.532*	1
	Sig. (2-tailed)	.011	.015	.002	.000	.000	.000	.375	.315	.000	.000	.023	
	N	18	18	18	18	18	18	18	18	18	18	18	24

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Lampiran 8.6. Hasil Plagscan

Similarity Report

PAPER NAME
TA-19.11.0051.docx

<p>WORD COUNT 11699 Words</p> <p>PAGE COUNT 37 Pages</p> <p>SUBMISSION DATE Mar 24, 2023 8:38 AM GMT+7</p>	<p>CHARACTER COUNT 71437 Characters</p> <p>FILE SIZE 69.4KB</p> <p>REPORT DATE Mar 24, 2023 8:39 AM GMT+7</p>
---	--

- **18% Overall Similarity**
The combined total of all matches, including overlapping sources, for each database.
 - 16% Internet database
 - 4% Publications database
 - Crossref database
 - Crossref Posted Content database
 - 9% Submitted Works database
- **Excluded from Similarity Report**
 - Bibliographic material
 - Quoted material
 - Cited material
 - Small Matches (Less than 10 words)
 - Manually excluded text blocks

