

Lampiran 1 Analisa Normalitas dan Hasil Uji Signifikansi Data Fisik Larutan Suspensi

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
VISKO	.346	27	.000	.635	27	.010**
MASS_JNS	.082	27	.200*	.969	27	.604

** . This is an upper bound of the true significance.

* . This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Uji Signifikansi Massa Jenis Larutan Suspensi berdasar ANOVA satu arah

Descriptives

MASS_JNS

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
0%	9	1.064089	3.54558E-03	.001182	1.061364	1.066814	1.0592	1.0692
50%	9	1.064244	1.45526E-03	.000485	1.063126	1.065363	1.0614	1.0666
100%	9	1.064089	3.34531E-03	.001115	1.061517	1.066660	1.0596	1.0688
Total	27	1.064141	2.82288E-03	.000543	1.063024	1.065257	1.0592	1.0692

MASS_JNS

Duncan^a

PERLAK	N	Subset for alpha = .05
		1
0%	9	1.064089
100%	9	1.064089
50%	9	1.064244
Sig.		.917

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 9.000.

Uji Signifikansi Viskositas Larutan Suspensi dengan Non-parametrik

Descriptives

VISKO

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
100%	9	4,2222	,26352	,08784	4,0197	4,4248	4,00	4,50
50%	9	4,2778	,26352	,08784	4,0752	4,4803	4,00	4,50
0%	9	4,2778	,26352	,08784	4,0752	4,4803	4,00	4,50
Total	27	4,2593	,25459	,04900	4,1585	4,3600	4,00	4,50

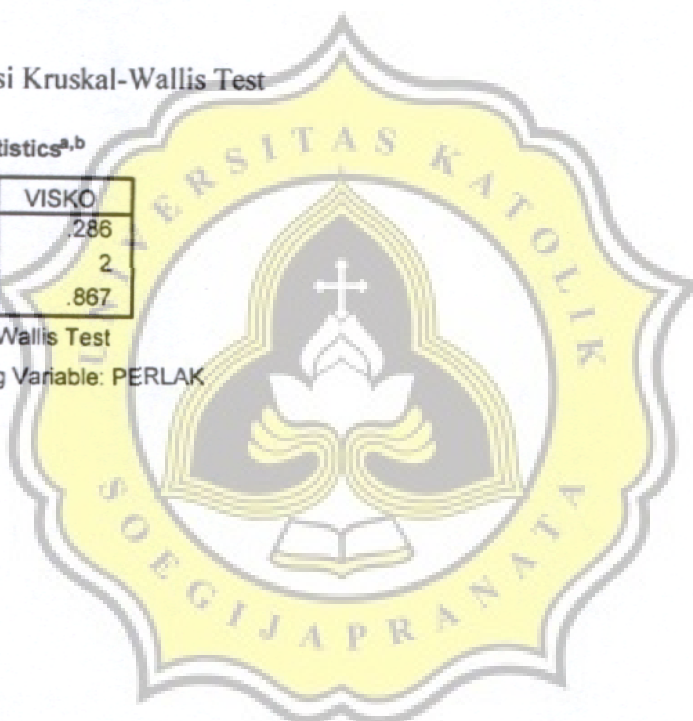
Uji Signifikansi Kruskal-Wallis Test

Test Statistics^{a,b}

	VISKO
Chi-Square	.286
df	2
Asymp. Sig.	.867

a. Kruskal Wallis Test

b. Grouping Variable: PERLAK



Lampiran 2 Analisa Normalitas dan Hasil Uji Signifikansi Data Fisik *Beads*

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
BULK_DEN	,099	36	,200*	,983	36	,833
KENYAL	,350	36	,000	,736	36	,000
KERAS	,350	36	,000	,736	36	,000

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Uji Signifikansi Bulk Density dengan ANOVA satu arah

Descriptives

BULK_DEN									
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
0%	9	1.045478	2.05169E-03	,000684	1.043901	1.047055	1.0420	1.0483	
25%	9	1.045711	7.50740E-04	,000250	1.045134	1.046288	1.0444	1.0469	
50%	9	1.045589	1.31782E-03	,000439	1.044576	1.046602	1.0434	1.0472	
75%	9	1.045822	1.79219E-03	,000597	1.044445	1.047200	1.0434	1.0486	
Total	36	1.045650	1.49638E-03	,000249	1.045144	1.046156	1.0420	1.0486	

BULK_DEN

Duncan^a

PERLAK	N	Subset for alpha = .05
		1
0%	9	1.045478
50%	9	1.045589
25%	9	1.045711
75%	9	1.045822
Sig.		.674

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 9.000.

Uji Signifikansi Kekenyalan Beads dengan Non-Parametrik

Descriptives

KENYAL

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
0%	9	,013367	,0001500	,0000500	,013251	,013482	,0131	,0136
25%	9	,018522	,0002438	,0000813	,018335	,018710	,0182	,0189
50%	9	,020556	,0001878	,0000626	,020411	,020700	,0203	,0209
75%	9	,042667	,0012580	,0004193	,041700	,043634	,0406	,0439
Total	36	,023778	,0113921	,0018987	,019923	,027632	,0131	,0439

Uji Kruskal-Wallis

Test Statistics^{a,b}

	KENYAL
Chi-Square	32,906
df	3
Asymp. Sig.	,000

a. Kruskal Wallis Test

b. Grouping Variable: PERLAK

Tabel 11. Signifikansi Uji Mann-Whitney pada Kekenyalan beads

	0%	25%	50%	75%
0%	-	*	*	*
25%	*	-	*	*
50%	*	*	-	*
75%	*	*	*	-

Keterangan : tanda * menunjukkan ada beda nyata

Uji Signifikansi Kekerasan *Beads* dengan Analisa Non-parametrik

Descriptives

KERAS								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
0%	9	10,025000	,1125000	,0375000	9,938525	10,111475	9,8250	10,2000
25%	9	13,891667	,1828592	,0609531	13,751109	14,032225	13,6500	14,1750
50%	9	15,416667	,1408678	,0469559	15,308386	15,524947	15,2250	15,6750
75%	9	32,000000	,9434809	,3144936	31,274776	32,725224	30,4500	32,9250
Total	36	17,833333	8,5440414	1,4240069	14,942446	20,724221	9,8250	32,9250

Uji Signifikansi Kruskal-Wallis Test

Test Statistics^{a,b}

	KERAS
Chi-Square	32,906
df	3
Asymp. Sig.	,000

a. Kruskal Wallis Test

b. Grouping Variable: PERLAK

Tabel 12. Signifikansi Uji Mann-Whitney pada kekerasan *beads*

	0%	25%	50%	75%
0%	-	*	*	*
25%	*	-	*	*
50%	*	*	-	*
75%	*	*	*	-

Keterangan : tanda * menunjukkan ada beda nyata

Lampiran 3 Analisa Normalitas Data Kimia dan Uji Signifikansi Kadar Air dan Uji Signifikansi Kadar Air dengan ANOVA satu arah

Descriptives

KDR AIR

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
0%-0%	3	45.4467	5.508E-02	3.180E-02	45.3099	45.5835	45.39	45.50
0%-25%	3	45.4200	5.568E-02	3.215E-02	45.2817	45.5583	45.37	45.48
0%-50%	3	45.4300	6.928E-02	4.000E-02	45.2579	45.6021	45.39	45.51
0%-75%	3	45.4733	3.512E-02	2.028E-02	45.3861	45.5606	45.44	45.51
50%-0%	3	45.4733	.1159	6.692E-02	45.1854	45.7613	45.34	45.55
50%-25%	3	45.5767	3.512E-02	2.028E-02	45.4894	45.6639	45.54	45.61
50%-50%	3	45.6000	1.732E-02	1.000E-02	45.5570	45.6430	45.59	45.62
50%-75%	3	45.6067	1.528E-02	8.819E-03	45.5687	45.6446	45.59	45.62
100%-0%	3	45.6667	1.528E-02	8.819E-03	45.6287	45.7046	45.65	45.68
100%-25%	3	45.6700	2.646E-02	1.528E-02	45.6043	45.7357	45.65	45.70
100%-50%	3	45.6700	2.646E-02	1.528E-02	45.6043	45.7357	45.64	45.69
100%-75%	3	45.6900	1.732E-02	1.000E-02	45.6470	45.7330	45.68	45.71
Total	36	45.5603	.1097	1.829E-02	45.5232	45.5974	45.34	45.71

Duncan^a

SUS BED	N	Subset for alpha = .05		
		1	2	3
0%-25%	3	45.4200		
0%-50%	3	45.4300		
0%-0%	3	45.4467		
0%-75%	3	45.4733		
50%-0%	3	45.4733		
50%-25%	3		45.5767	
50%-50%	3		45.6000	45.6000
50%-75%	3		45.6067	45.6067
100%-0%	3		45.6667	45.6667
100%-25%	3		45.6700	45.6700
100%-50%	3		45.6700	45.6700
100%-75%	3			45.6900
Sig.		.248	.050	.059

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 4 Uji Signifikansi Kadar Abu dengan Non-parametrik

Descriptives

KDR_ABU	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
					0%-0%	3		
0%-25%	3	.4300	1.000E-02	5.774E-03	.4052	.4548	.42	.44
0%-50%	3	.4567	1.155E-02	6.667E-03	.4280	.4854	.45	.47
0%-75%	3	.4667	5.774E-03	3.333E-03	.4523	.4810	.46	.47
50%-0%	3	.8633	1.528E-02	8.819E-03	.8254	.9013	.85	.88
50%-25%	3	.8500	2.646E-02	1.528E-02	.7843	.9157	.82	.87
50%-50%	3	.8567	2.082E-02	1.202E-02	.8050	.9084	.84	.88
50%-75%	3	.8400	2.000E-02	1.155E-02	.7903	.8897	.82	.86
100%-0%	3	1.2233	2.517E-02	1.453E-02	1.1608	1.2858	1.20	1.25
100%-25%	3	1.2267	3.215E-02	1.856E-02	1.1468	1.3065	1.19	1.25
100%-50%	3	1.2400	4.000E-02	2.309E-02	1.1406	1.3394	1.20	1.28
100%-75%	3	1.2367	2.517E-02	1.453E-02	1.1742	1.2992	1.21	1.26
Total	36	.8419	.3280	5.467E-02	.7310	.9529	.41	1.28

Uji Signifikansi Kruskal-Wallis Test

Test Statistics^{a,b}

	KDR_ABU
Chi-Square	32.612
df	11
Asymp. Sig.	.001

a. Kruskal Wallis Test

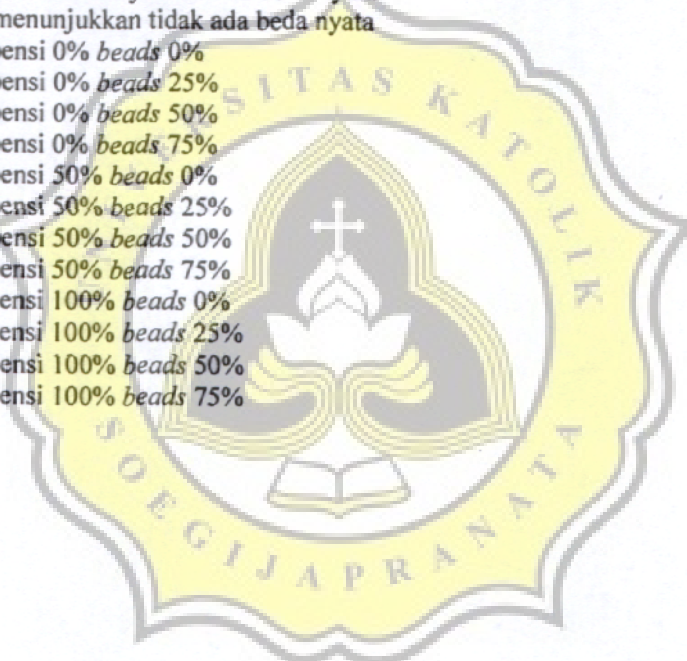
b. Grouping Variable: SUS_BED

Tabel 13. Signifikansi Mann-Whitney Test untuk Kadar Abu Minuman Orbital

	1	2	3	4	5	6	7	8	9	10	11	12
1	-	TB	*	*	*	*	*	*	*	*	*	*
2	TB	-	*	*	*	*	*	*	*	*	*	*
3	*	*	-	TB	*	*	*	*	*	*	*	*
4	*	*	TB	-	*	*	*	*	*	*	*	*
5	*	*	*	*	-	TB	TB	TB	*	*	*	*
6	*	*	*	*	TB	-	TB	TB	*	*	*	*
7	*	*	*	*	TB	TB	-	TB	*	*	*	*
8	*	*	*	*	TB	TB	TB	-	*	*	*	*
9	*	*	*	*	*	*	*	*	-	TB	TB	TB
10	*	*	*	*	*	*	*	*	TB	-	TB	TB
11	*	*	*	*	*	*	*	*	TB	TB	-	TB
12	*	*	*	*	*	*	*	*	TB	TB	TB	-

Keterangan : tanda * menunjukkan ada beda nyata
tanda TB menunjukkan tidak ada beda nyata

- 1 : larutan suspensi 0% beads 0%
- 2 : larutan suspensi 0% beads 25%
- 3 : larutan suspensi 0% beads 50%
- 4 : larutan suspensi 0% beads 75%
- 5 : larutan suspensi 50% beads 0%
- 6 : larutan suspensi 50% beads 25%
- 7 : larutan suspensi 50% beads 50%
- 8 : larutan suspensi 50% beads 75%
- 9 : larutan suspensi 100% beads 0%
- 10 : larutan suspensi 100% beads 25%
- 11 : larutan suspensi 100% beads 50%
- 12 : larutan suspensi 100% beads 75%



Lampiran 5 Uji Signifikansi Kadar Serat dengan Non-parametrik

Descriptives

SERAT

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
0%-0%	3	.8067	5.774E-03	3.333E-03	.7923	.8210	.80	.81
0%-25%	3	.8233	5.774E-03	3.333E-03	.8090	.8377	.82	.83
0%-50%	3	.8367	5.774E-03	3.333E-03	.8223	.8510	.83	.84
0%-75%	3	.8467	5.774E-03	3.333E-03	.8323	.8610	.84	.85
50%-0%	3	1.1467	5.774E-03	3.333E-03	1.1323	1.1610	1.14	1.15
50%-25%	3	1.1600	1.000E-02	5.774E-03	1.1352	1.1848	1.15	1.17
50%-50%	3	1.1667	5.774E-03	3.333E-03	1.1523	1.1810	1.16	1.17
50%-75%	3	1.1767	5.774E-03	3.333E-03	1.1623	1.1910	1.17	1.18
100%-0%	3	1.6533	5.774E-03	3.333E-03	1.6390	1.6677	1.65	1.66
100%-25%	3	1.6667	5.774E-03	3.333E-03	1.6523	1.6810	1.66	1.67
100%-50%	3	1.6800	.0000	.0000	1.6800	1.6800	1.68	1.68
100%-75%	3	1.6900	1.000E-02	5.774E-03	1.6652	1.7148	1.68	1.70
Total	36	1.2211	.3523	5.872E-02	1.1019	1.3403	.80	1.70

Uji Signifikansi Kruskal-Wallis Test

Test Statistics^{a,b}

	SERAT
Chi-Square	34.510
df	11
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: SUS_BED

Tabel 14. Signifikansi Mann-Whitney Test untuk Kadar Serat Minuman Orbital

	1	2	3	4	5	6	7	8	9	10	11	12
1	-	*	*	*	*	*	*	*	*	*	*	*
2	*	-	TB	*	*	*	*	*	*	*	*	*
3	*	TB	-	TB	*	*	*	*	*	*	*	*
4	*	*	TB	-	*	*	*	*	*	*	*	*
5	*	*	*	*	-	TB	*	*	*	*	*	*
6	*	*	*	*	TB	-	TB	TB	*	*	*	*
7	*	*	*	*	*	TB	-	TB	*	*	*	*
8	*	*	*	*	*	TB	TB	-	*	*	*	*
9	*	*	*	*	*	*	*	*	-	TB	*	*
10	*	*	*	*	*	*	*	*	TB	-	*	*
11	*	*	*	*	*	*	*	*	*	*	-	TB
12	*	*	*	*	*	*	*	*	*	*	TB	-

Keterangan : tanda * menunjukkan ada beda nyata
tanda TB menunjukkan tidak ada beda nyata

1 : larutan suspensi 0% beads 0%

2 : larutan suspensi 0% beads 25%

3 : larutan suspensi 0% beads 50%

4 : larutan suspensi 0% beads 75%

5 : larutan suspensi 50% beads 0%

6 : larutan suspensi 50% beads 25%

7 : larutan suspensi 50% beads 50%

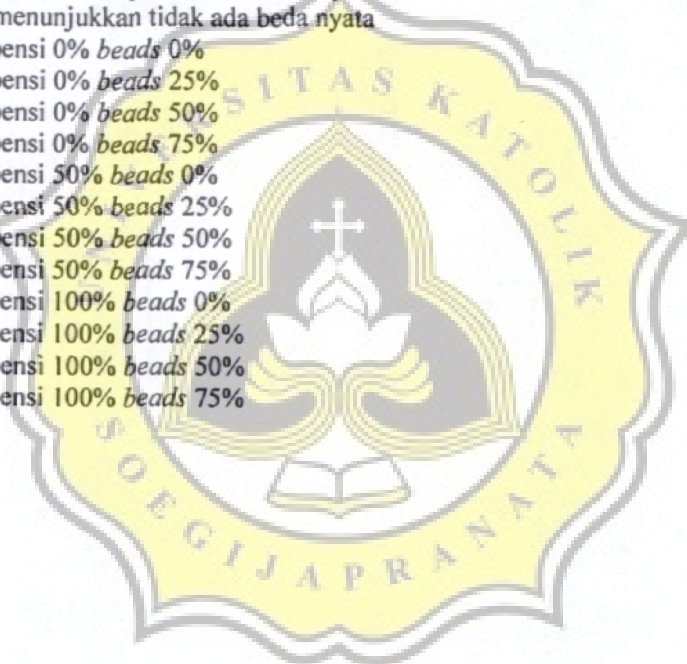
8 : larutan suspensi 50% beads 75%

9 : larutan suspensi 100% beads 0%

10 : larutan suspensi 100% beads 25%

11 : larutan suspensi 100% beads 50%

12 : larutan suspensi 100% beads 75%



Lampiran 6 Analisa Normalitas dan Uji Signifikansi Data Mikrobiologi

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
MIKRO	.228	39	.000	.718	39	.010**

** . This is an upper bound of the true significance.

a. Lilliefors Significance Correction

Descriptives

MIKRO

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
0%-0%	3	6.5135	2.368E-02	1.367E-02	6.4547	6.5723	6.50	6.54
0%-25%	3	6.5232	3.733E-02	2.155E-02	6.4305	6.6160	6.48	6.55
0%-50%	3	6.5280	1.252E-02	7.226E-03	6.4969	6.5591	6.52	6.54
0%-75%	3	6.5320	3.417E-02	1.973E-02	6.4471	6.6169	6.49	6.56
50%-0%	3	6.5533	2.237E-02	1.291E-02	6.4978	6.6089	6.53	6.57
50%-25%	3	6.5620	2.832E-02	1.635E-02	6.4916	6.6323	6.53	6.59
50%-50%	3	6.5630	2.865E-02	1.654E-02	6.4918	6.6341	6.54	6.59
50%-75%	3	6.5738	1.059E-02	6.112E-03	6.5475	6.6001	6.56	6.59
100%-0%	3	6.6003	2.492E-02	1.439E-02	6.5384	6.6622	6.58	6.63
100%-25%	3	6.6080	2.310E-02	1.334E-02	6.5506	6.6654	6.58	6.63
100%-50%	3	6.6145	2.851E-02	1.646E-02	6.5437	6.6853	6.59	6.64
100%-75%	3	6.6171	1.079E-02	6.232E-03	6.5903	6.6439	6.61	6.63
"kontrol"	3	6.2482	4.773E-02	2.756E-02	6.1296	6.3667	6.20	6.30
Total	39	6.5413	9.528E-02	1.526E-02	6.5104	6.5722	6.20	6.64

Uji Signifikansi Kruskal-Wallis

Test Statistics^{a, b}

	MIKRO
Chi-Square	30.764
df	12
Asymp. Sig.	.002

a. Kruskal Wallis Test

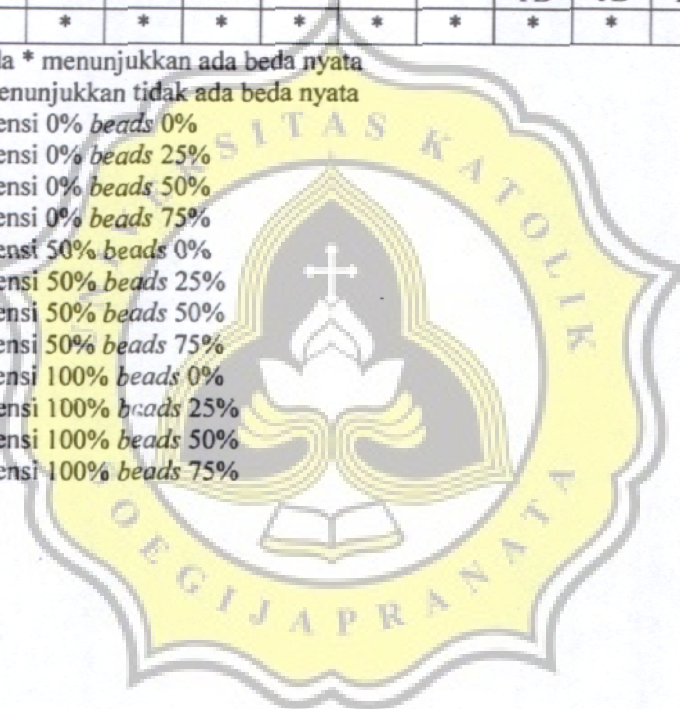
b. Grouping Variable: PERLAK

Tabel 15. Signifikansi Mann-Whitney Test pada data mikrobiologi

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	-	TB	TB	TB	TB	TB	TB	*	*	*	*	*	*
2	TB	-	TB	TB	TB	TB	TB	*	*	*	*	*	*
3	TB	TB	-	TB	TB	TB	TB	*	*	*	*	*	*
4	TB	TB	TB	-	TB	TB	TB	*	*	*	*	*	*
5	TB	TB	TB	TB	-	TB	TB	TB	*	*	*	*	*
6	TB	TB	TB	TB	TB	-	TB	TB	TB	TB	TB	*	*
7	TB	TB	TB	TB	TB	TB	-	TB	TB	TB	TB	*	*
8	*	*	*	*	TB	TB	TB	-	TB	TB	*	*	*
9	*	*	*	*	*	TB	TB	TB	-	TB	TB	TB	*
10	*	*	*	*	*	TB	TB	TB	TB	-	TB	TB	*
11	*	*	*	*	*	TB	TB	*	TB	TB	-	TB	*
12	*	*	*	*	*	*	*	*	TB	TB	TB	-	*
13	*	*	*	*	*	*	*	*	*	*	*	*	-

Keterangan : tanda * menunjukkan ada beda nyata
tanda TB menunjukkan tidak ada beda nyata

- 1 : larutan suspensi 0% beads 0%
- 2 : larutan suspensi 0% beads 25%
- 3 : larutan suspensi 0% beads 50%
- 4 : larutan suspensi 0% beads 75%
- 5 : larutan suspensi 50% beads 0%
- 6 : larutan suspensi 50% beads 25%
- 7 : larutan suspensi 50% beads 50%
- 8 : larutan suspensi 50% beads 75%
- 9 : larutan suspensi 100% beads 0%
- 10 : larutan suspensi 100% beads 25%
- 11 : larutan suspensi 100% beads 50%
- 12 : larutan suspensi 100% beads 75%
- 13 : kontrol



Lampiran 7 Analisa Crosstabs Uji Organoleptik *Beads*

Crosstab

			TEKSTUR					Total
			"sangat tidak liat"	"tidak liat"	"cukup liat"	"liat"	"sangat liat"	
BEADS	0%-0%	Count	2	12	14	2		30
		% within BEADS	6.7%	40.0%	46.7%	6.7%		100.0%
	0%-25%	Count		14	11	5		30
		% within BEADS		46.7%	36.7%	16.7%		100.0%
	0%-50%	Count		4	18	8		30
		% within BEADS		13.3%	60.0%	26.7%		100.0%
	0%-75%	Count		9	17	3	1	30
		% within BEADS		30.0%	56.7%	10.0%	3.3%	100.0%
	50%-0%	Count		4	11	10	5	30
		% within BEADS		13.3%	36.7%	33.3%	16.7%	100.0%
	50%-25%	Count		2	15	13		30
		% within BEADS		6.7%	50.0%	43.3%		100.0%
	50%-50%	Count	2	1	18	7	2	30
		% within BEADS	6.7%	3.3%	60.0%	23.3%	6.7%	100.0%
	50%-75%	Count	2	6	14	7	1	30
		% within BEADS	6.7%	20.0%	46.7%	23.3%	3.3%	100.0%
	100%-0%	Count	1	5	10	12	2	30
		% within BEADS	3.3%	16.7%	33.3%	40.0%	6.7%	100.0%
	100%-25%	Count	1	4	15	9	1	30
		% within BEADS	3.3%	13.3%	50.0%	30.0%	3.3%	100.0%
	100%-50%	Count		7	13	10		30
		% within BEADS		23.3%	43.3%	33.3%		100.0%
	100%-75%	Count		7	12	9	2	30
		% within BEADS		23.3%	40.0%	30.0%	6.7%	100.0%
Total		Count	8	75	168	95	14	360
		% within BEADS	2.2%	20.8%	46.7%	26.4%	3.9%	100.0%

Perhitungan skor nilai :

$$0\%-0\% = [(2 \times 1) + (12 \times 2) + (14 \times 3) + (2 \times 4) + (0 \times 5)] / 30 = 2.53$$

$$0\%-25\% = [(0 \times 1) + (14 \times 2) + (11 \times 3) + (5 \times 4) + (0 \times 5)] / 30 = 2.70$$

$$0\%-50\% = [(0 \times 1) + (4 \times 2) + (18 \times 3) + (8 \times 4) + (0 \times 5)] / 30 = 2.97$$

$$0\%-75\% = [(0 \times 1) + (9 \times 2) + (17 \times 3) + (3 \times 4) + (1 \times 5)] / 30 = 2.87$$

$$50\%-0\% = [(0 \times 1) + (4 \times 2) + (11 \times 3) + (10 \times 4) + (5 \times 5)] / 30 = 3.20$$

$$50\%-25\% = [(0 \times 1) + (2 \times 2) + (15 \times 3) + (13 \times 4) + (0 \times 5)] / 30 = 3.37$$

$$50\%-50\% = [(2 \times 1) + (1 \times 2) + (18 \times 3) + (7 \times 4) + (2 \times 5)] / 30 = 3.20$$

$$50\%-75\% = [(2 \times 1) + (6 \times 2) + (14 \times 3) + (7 \times 4) + (1 \times 5)] / 30 = 3.13$$

$$100\%-0\% = [(1 \times 1) + (5 \times 2) + (10 \times 3) + (12 \times 4) + (2 \times 5)] / 30 = 3.30$$

$$100\%-25\% = [(1 \times 1) + (4 \times 2) + (15 \times 3) + (9 \times 4) + (1 \times 5)] / 30 = 3.17$$

$$100\%-50\% = [(0 \times 1) + (7 \times 2) + (13 \times 3) + (10 \times 4) + (0 \times 5)] / 30 = 3.10$$

$$100\%-75\% = [(0 \times 1) + (7 \times 2) + (12 \times 3) + (9 \times 4) + (2 \times 5)] / 30 = 3.53$$

Crosstab

			KEKENYAL					Total
			"sangat tidak kenyal"	"tidak kenyal"	"cukup kenyal"	"kenyal"	"sangat kenyal"	
BEADS	0%-0%	Count	1	20	6	3		30
		% within BEADS	3.3%	66.7%	20.0%	10.0%		100.0%
	0%-25%	Count		15	12	3		30
		% within BEADS		50.0%	40.0%	10.0%		100.0%
	0%-50%	Count		2	20	8		30
		% within BEADS		6.7%	66.7%	26.7%		100.0%
	0%-75%	Count		9	16	4	1	30
		% within BEADS		30.0%	53.3%	13.3%	3.3%	100.0%
	50%-0%	Count		12	6	10	2	30
		% within BEADS		40.0%	20.0%	33.3%	6.7%	100.0%
	50%-25%	Count		3	15	11	1	30
		% within BEADS		10.0%	50.0%	36.7%	3.3%	100.0%
	50%-50%	Count		5	17	5	3	30
		% within BEADS		16.7%	56.7%	16.7%	10.0%	100.0%
	50%-75%	Count	1	7	11	9	2	30
		% within BEADS	3.3%	23.3%	36.7%	30.0%	6.7%	100.0%
	100%-0%	Count	1	5	16	6	2	30
		% within BEADS	3.3%	16.7%	53.3%	20.0%	6.7%	100.0%
	100%-25%	Count		8	16	6	2	30
		% within BEADS		20.0%	53.3%	20.0%	6.7%	100.0%
	100%-50%	Count		1	20	8	1	30
		% within BEADS		3.3%	66.7%	26.7%	3.3%	100.0%
	100%-75%	Count		4	11	13	2	30
		% within BEADS		13.3%	36.7%	43.3%	6.7%	100.0%
Total		Count	3	89	166	86	16	360
		% within BEADS	8%	24.7%	46.1%	23.9%	4.4%	100.0%

Perhitungan skor nilai :

$$0\%-0\% = [(1 \times 1) + (20 \times 2) + (6 \times 3) + (3 \times 4) + (0 \times 5)] / 30 = 2.37$$

$$0\%-25\% = [(0 \times 1) + (15 \times 2) + (12 \times 3) + (3 \times 4) + (0 \times 5)] / 30 = 2.60$$

$$0\%-50\% = [(0 \times 1) + (2 \times 2) + (20 \times 3) + (8 \times 4) + (0 \times 5)] / 30 = 3.20$$

$$0\%-75\% = [(0 \times 1) + (9 \times 2) + (16 \times 3) + (4 \times 4) + (1 \times 5)] / 30 = 2.90$$

$$50\%-0\% = [(0 \times 1) + (12 \times 2) + (6 \times 3) + (10 \times 4) + (2 \times 5)] / 30 = 3.07$$

$$50\%-25\% = [(0 \times 1) + (3 \times 2) + (15 \times 3) + (11 \times 4) + (1 \times 5)] / 30 = 3.33$$

$$50\%-50\% = [(0 \times 1) + (5 \times 2) + (17 \times 3) + (5 \times 4) + (3 \times 5)] / 30 = 3.20$$

$$50\%-75\% = [(1 \times 1) + (7 \times 2) + (11 \times 3) + (9 \times 4) + (2 \times 5)] / 30 = 3.13$$

$$100\%-0\% = [(1 \times 1) + (5 \times 2) + (16 \times 3) + (6 \times 4) + (2 \times 5)] / 30 = 3.10$$

$$100\%-25\% = [(0 \times 1) + (6 \times 2) + (16 \times 3) + (6 \times 4) + (2 \times 5)] / 30 = 3.13$$

$$100\%-50\% = [(0 \times 1) + (4 \times 2) + (11 \times 3) + (13 \times 4) + (2 \times 5)] / 30 = 3.30$$

$$100\%-75\% = [(0 \times 1) + (7 \times 2) + (12 \times 3) + (9 \times 4) + (2 \times 5)] / 30 = 3.43$$

Crosstab

			OVERALL				Total
			"tidak suka"	"cukup suka"	"suka"	"sangat suka"	
BEADS	0%-0%	Count	4	13	12	1	30
		% within BEADS	13.3%	43.3%	40.0%	3.3%	100.0%
	0%-25%	Count	4	16	9	1	30
		% within BEADS	13.3%	53.3%	30.0%	3.3%	100.0%
	0%-50%	Count	2	9	18	1	30
		% within BEADS	6.7%	30.0%	60.0%	3.3%	100.0%
	0%-75%	Count	3	14	9	4	30
		% within BEADS	10.0%	46.7%	30.0%	13.3%	100.0%
	50%-0%	Count	2	15	7	6	30
		% within BEADS	6.7%	50.0%	23.3%	20.0%	100.0%
	50%-25%	Count	2	12	15	1	30
		% within BEADS	6.7%	40.0%	50.0%	3.3%	100.0%
	50%-50%	Count	1	18	10	1	30
		% within BEADS	3.3%	60.0%	33.3%	3.3%	100.0%
	50%-75%	Count	4	10	13	3	30
		% within BEADS	13.3%	33.3%	43.3%	10.0%	100.0%
	100%-0%	Count	5	14	9	2	30
		% within BEADS	16.7%	46.7%	30.0%	6.7%	100.0%
	100%-25%	Count	4	13	9	4	30
		% within BEADS	13.3%	43.3%	30.0%	13.3%	100.0%
	100%-50%	Count	1	14	12	3	30
		% within BEADS	3.3%	46.7%	40.0%	10.0%	100.0%
	100%-75%	Count	1	14	11	4	30
		% within BEADS	3.3%	46.7%	36.7%	13.3%	100.0%
Total		Count	33	162	134	31	360
		% within BEADS	9.2%	45.0%	37.2%	8.6%	100.0%

Perhitungan skor nilai :

$$0\%-0\% = [(0 \times 1) + (4 \times 2) + (13 \times 3) + (12 \times 4) + (1 \times 5)] / 30 = 3.33$$

$$0\%-25\% = [(0 \times 1) + (4 \times 2) + (16 \times 3) + (9 \times 4) + (1 \times 5)] / 30 = 3.60$$

$$0\%-50\% = [(0 \times 1) + (2 \times 2) + (9 \times 3) + (18 \times 4) + (1 \times 5)] / 30 = 3.23$$

$$0\%-75\% = [(0 \times 1) + (3 \times 2) + (14 \times 3) + (9 \times 4) + (4 \times 5)] / 30 = 3.47$$

$$50\%-0\% = [(0 \times 1) + (2 \times 2) + (15 \times 3) + (7 \times 4) + (6 \times 5)] / 30 = 3.57$$

$$50\%-25\% = [(0 \times 1) + (2 \times 2) + (12 \times 3) + (15 \times 4) + (1 \times 5)] / 30 = 3.50$$

$$50\%-50\% = [(0 \times 1) + (1 \times 2) + (18 \times 3) + (10 \times 4) + (1 \times 5)] / 30 = 3.37$$

$$50\%-75\% = [(0 \times 1) + (4 \times 2) + (10 \times 3) + (13 \times 4) + (3 \times 5)] / 30 = 3.50$$

$$100\%-0\% = [(0 \times 1) + (5 \times 2) + (14 \times 3) + (9 \times 4) + (2 \times 5)] / 30 = 3.27$$

$$100\%-25\% = [(0 \times 1) + (4 \times 2) + (13 \times 3) + (9 \times 4) + (4 \times 5)] / 30 = 3.60$$

$$100\%-50\% = [(0 \times 1) + (1 \times 2) + (14 \times 3) + (12 \times 4) + (3 \times 5)] / 30 = 3.57$$

$$100\%-75\% = [(0 \times 1) + (1 \times 2) + (14 \times 3) + (11 \times 4) + (4 \times 5)] / 30 = 3.43$$

Lampiran 8 Analisa Crosstabs Uji Organoleptik Produk Minuman Orbital

Crosstab

PRÓDUK			RASA					Total
			"sangat tidak suka"	"tidak suka"	"cukup suka"	"suka"	"sangat suka"	
0%-0%	Count			11	10	7	2	30
	% within RASA			15.5%	8.0%	5.3%	6.9%	8.3%
0%-25%	Count			5	12	13		30
	% within RASA			7.0%	9.6%	9.9%		8.3%
0%-50%	Count			3	7	19	1	30
	% within RASA			4.2%	5.6%	14.5%	3.4%	8.3%
0%-75%	Count			5	15	8	2	30
	% within RASA			7.0%	12.0%	6.1%	6.9%	8.3%
50%-0%	Count			6	9	12	3	30
	% within RASA			8.5%	7.2%	9.2%	10.3%	8.3%
50%-25%	Count				12	17	1	30
	% within RASA				9.6%	13.0%	3.4%	8.3%
50%-50%	Count			7	11	9	3	30
	% within RASA			9.9%	8.8%	6.9%	10.3%	8.3%
50%-75%	Count			7	7	11	5	30
	% within RASA			9.9%	5.6%	8.4%	17.2%	8.3%
100%-0%	Count		1	8	12	6	3	30
	% within RASA		25.0%	11.3%	9.6%	4.6%	10.3%	8.3%
100%-25%	Count			7	9	10	4	30
	% within RASA			9.9%	7.2%	7.6%	13.8%	8.3%
100%-50%	Count		1	6	8	12	3	30
	% within RASA		25.0%	8.5%	6.4%	9.2%	10.3%	8.3%
100%-75%	Count		2	6	13	7	2	30
	% within RASA		50.0%	8.5%	10.4%	5.3%	6.9%	8.3%
Total	Count		4	71	125	131	29	360
	% within RASA		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Perhitungan skor nilai :

$$0\%-0\% = [(0 \times 1) + (11 \times 2) + (10 \times 3) + (7 \times 4) + (2 \times 5)] / 30 = 3.00$$

$$0\%-25\% = [(0 \times 1) + (5 \times 2) + (12 \times 3) + (13 \times 4) + (0 \times 5)] / 30 = 3.27$$

$$0\%-50\% = [(0 \times 1) + (3 \times 2) + (7 \times 3) + (19 \times 4) + (1 \times 5)] / 30 = 3.60$$

$$0\%-75\% = [(0 \times 1) + (5 \times 2) + (15 \times 3) + (8 \times 4) + (2 \times 5)] / 30 = 3.23$$

$$50\%-0\% = [(0 \times 1) + (6 \times 2) + (9 \times 3) + (12 \times 4) + (3 \times 5)] / 30 = 3.40$$

$$50\%-25\% = [(0 \times 1) + (0 \times 2) + (12 \times 3) + (17 \times 4) + (1 \times 5)] / 30 = 3.63$$

$$50\%-50\% = [(0 \times 1) + (7 \times 2) + (11 \times 3) + (9 \times 4) + (3 \times 5)] / 30 = 3.27$$

$$50\%-75\% = [(0 \times 1) + (7 \times 2) + (7 \times 3) + (11 \times 4) + (5 \times 5)] / 30 = 3.47$$

$$100\%-0\% = [(1 \times 1) + (8 \times 2) + (12 \times 3) + (6 \times 4) + (3 \times 5)] / 30 = 3.07$$

$$100\%-25\% = [(0 \times 1) + (7 \times 2) + (9 \times 3) + (10 \times 4) + (4 \times 5)] / 30 = 3.37$$

$$100\%-50\% = [(1 \times 1) + (6 \times 2) + (8 \times 3) + (12 \times 4) + (3 \times 5)] / 30 = 3.33$$

$$100\%-75\% = [(2 \times 1) + (6 \times 2) + (13 \times 3) + (7 \times 4) + (2 \times 5)] / 30 = 3.03$$

Crosstab

			APPEAR					Total
			"sangat tidak suka"	"tidak suka"	"cukup suka"	"suka"	"sangat suka"	
PRÓDUK	0%-0%	Count		3	18	9		30
		% within APPEAR		4.9%	12.3%	6.8%		8.3%
	0%-25%	Count		5	18	7		30
		% within APPEAR		8.2%	12.3%	5.3%		8.3%
	0%-50%	Count		5	13	11	1	30
		% within APPEAR		8.2%	8.9%	8.3%	5.9%	8.3%
	0%-75%	Count		5	11	12	2	30
		% within APPEAR		8.2%	7.5%	9.0%	11.8%	8.3%
	50%-0%	Count		6	11	13		30
		% within APPEAR		9.8%	7.5%	9.8%		8.3%
	50%-25%	Count		2	13	12	3	30
		% within APPEAR		3.3%	8.9%	9.0%	17.6%	8.3%
	50%-50%	Count		7	11	11	1	30
		% within APPEAR		11.5%	7.5%	8.3%	5.9%	8.3%
	50%-75%	Count	1	3	9	14	3	30
		% within APPEAR	33.3%	4.9%	6.2%	10.5%	17.6%	8.3%
	100%-0%	Count	1	5	11	12	1	30
		% within APPEAR	33.3%	8.2%	7.5%	9.0%	5.9%	8.3%
	100%-25%	Count	1	4	12	12	1	30
		% within APPEAR	33.3%	6.6%	8.2%	9.0%	5.9%	8.3%
100%-50%	Count		7	8	10	5	30	
	% within APPEAR		11.5%	5.5%	7.5%	29.4%	8.3%	
100%-75%	Count		9	11	10		30	
	% within APPEAR		14.8%	7.5%	7.5%		8.3%	
Total	Count		3	61	146	133	17	360
	% within APPEAR		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Perhitungan skor nilai :

$$0\%-0\% = [(0 \times 1) + (3 \times 2) + (18 \times 3) + (9 \times 4) + (0 \times 5)] / 30 = 3.20$$

$$0\%-25\% = [(0 \times 1) + (5 \times 2) + (18 \times 3) + (7 \times 4) + (0 \times 5)] / 30 = 3.07$$

$$0\%-50\% = [(0 \times 1) + (5 \times 2) + (13 \times 3) + (11 \times 4) + (1 \times 5)] / 30 = 3.27$$

$$0\%-75\% = [(0 \times 1) + (5 \times 2) + (11 \times 3) + (12 \times 4) + (2 \times 5)] / 30 = 3.37$$

$$50\%-0\% = [(0 \times 1) + (6 \times 2) + (11 \times 3) + (13 \times 4) + (0 \times 5)] / 30 = 3.23$$

$$50\%-25\% = [(0 \times 1) + (2 \times 2) + (13 \times 3) + (12 \times 4) + (3 \times 5)] / 30 = 3.53$$

$$50\%-50\% = [(0 \times 1) + (7 \times 2) + (11 \times 3) + (11 \times 4) + (1 \times 5)] / 30 = 3.20$$

$$50\%-75\% = [(1 \times 1) + (3 \times 2) + (9 \times 3) + (14 \times 4) + (3 \times 5)] / 30 = 3.50$$

$$100\%-0\% = [(1 \times 1) + (5 \times 2) + (11 \times 3) + (12 \times 4) + (1 \times 5)] / 30 = 3.23$$

$$100\%-25\% = [(1 \times 1) + (4 \times 2) + (12 \times 3) + (12 \times 4) + (1 \times 5)] / 30 = 3.27$$

$$100\%-50\% = [(0 \times 1) + (7 \times 2) + (8 \times 3) + (10 \times 4) + (5 \times 5)] / 30 = 3.43$$

$$100\%-75\% = [(0 \times 1) + (9 \times 2) + (11 \times 3) + (10 \times 4) + (0 \times 5)] / 30 = 3.03$$

APLIKASI TEPUNG KONJAK (*Amorphophalus konjac* K. Koch) dan FRUKTO-OLIGOSAKARIDA (FOS) DALAM PRODUK PREBIOTIK *LEVITATION DRINK*

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Bahan pangan yang secara alamiah maupun telah melalui suatu proses pengolahan mengandung satu atau lebih senyawa-senyawa aktif yang berdasarkan kajian-kajian ilmiah memiliki fungsi fisiologis tertentu bagi kesehatan manusia dikatakan sebagai pangan fungsional (Badan POM). Golongan senyawa yang dapat digunakan sebagai senyawa aktif dalam pangan fungsional adalah serat pangan, oligosakarida, bakteri asam laktat, vitamin, gula alkohol, asam lemak tak jenuh, dan lain-lain (Astawan, 2005). Pangan fungsional dapat berupa makanan dan minuman yang cara pengkonsumsiannya dilakukan seperti makanan atau minuman pada umumnya. Produk pangan fungsional harus tetap memiliki karakteristik sensori seperti penampakan, warna, tekstur, dan citarasa yang dapat diterima oleh konsumen (Astawan, 2005).

Jelly merupakan salah satu jenis produk pangan yang disukai anak-anak sampai orang tua, sehingga pembuatan *jelly* sebagai salah satu produk pangan fungsional tidak akan membatasi pengkonsumsiannya pada kalangan tertentu saja. *Jelly* merupakan makanan semi padat yang umumnya terbuat dari sari buah – buahan yang dimasak dalam larutan gula (Astawan & Astawan, 1991). *Levitation drink* merupakan salah satu produk minuman berbasis *jelly*. *Levitation drink* merupakan suatu produk minuman rasa buah yang terdiri dari 2 bagian yaitu larutan suspensi (*suspension agent*) yang berfungsi sebagai matriks pengikat, dan bagian kedua yaitu butiran *jelly* (*beads*) yang berbentuk droplet dan kenyal.

Dalam pembuatan *levitation drink* pada umumnya digunakan *gellan gum* dan pada penelitian ini konjak gum akan digunakan sebagai *gelling agent* pengganti *gellan gum* baik dalam larutan suspensi maupun *beads*. Penelitian ini bertujuan untuk mengaplikasikan

konjak gum (konjac flour) sebagai sumber serat pangan dan frukto-oligosakarida sebagai sumber prebiotik pada produk *levitation drink*.

Konjak gum (konjac flour) didapat dari umbi *konjak gum* yang termasuk dalam spesies *Amorphophallus konjac*. *Konjak gum* termasuk dalam serat pangan yang larut, dengan struktur dan fungsi mirip pektin. *Konjak gum* sebagian besar berupa polisakarida hidrokoloidal yang disebut glukomanan. Glukomanan sendiri merupakan rantai D-glukosa dan D-manosa yang dihubungkan oleh ikatan β -1,4 serta mengandung gugus asetil (Ineson, 1999).

Selain memiliki kandungan serat pangan yang berasal dari penggunaan *konjak gum* sebagai *gelling agent*, pada larutan suspensi produk *levitation drink* juga akan ditambahkan frukto-oligosakarida (FOS) yang merupakan salah satu kelompok prebiotik. Prebiotik didefinisikan sebagai bahan pangan yang tidak dapat dicerna tubuh tetapi memiliki manfaat bagi pertumbuhan dan aktivitas mikroorganisme “baik” yang hidup dalam usus besar (Ransley *et al.*, 2001).

Oligosakarida akan meningkatkan populasi *Bifidobacteria* dan menurunkan jumlah bakteri yang merugikan. *Bifidobacteria* juga akan mencegah pertumbuhan bakteri patogen yang masuk dari luar tubuh dan bakteri saluran pencernaan yang merugikan, karena konsumsi oligosakarida akan memproduksi asam asetat dan asam laktat dengan perbandingan 3:2 dan kemampuan untuk menghasilkan zat bersifat sebagai antibiotik (Goldberg, 1990). Dengan terbentuknya zat-zat antibakteri dan asam ini maka pertumbuhan bakteri patogen seperti *Salmonella* dan *Escherichia coli* akan dihambat. Bifidin adalah antibiotik yang dihasilkan oleh *Bifidobacterium bifidum* yang sangat efektif melawan *Shigella dysenteria*, *Salmonella typhosa*, *Staphylococcus aureus*, *Escherichia coli*, dan bakteri lainnya (Schmidt & Labuza, 2000).