

Lampiran 4 . Tes Deskriptif Kadar Abu (non-parametrik)

KOH,kap VS KOH,Na

Descriptive Statistics

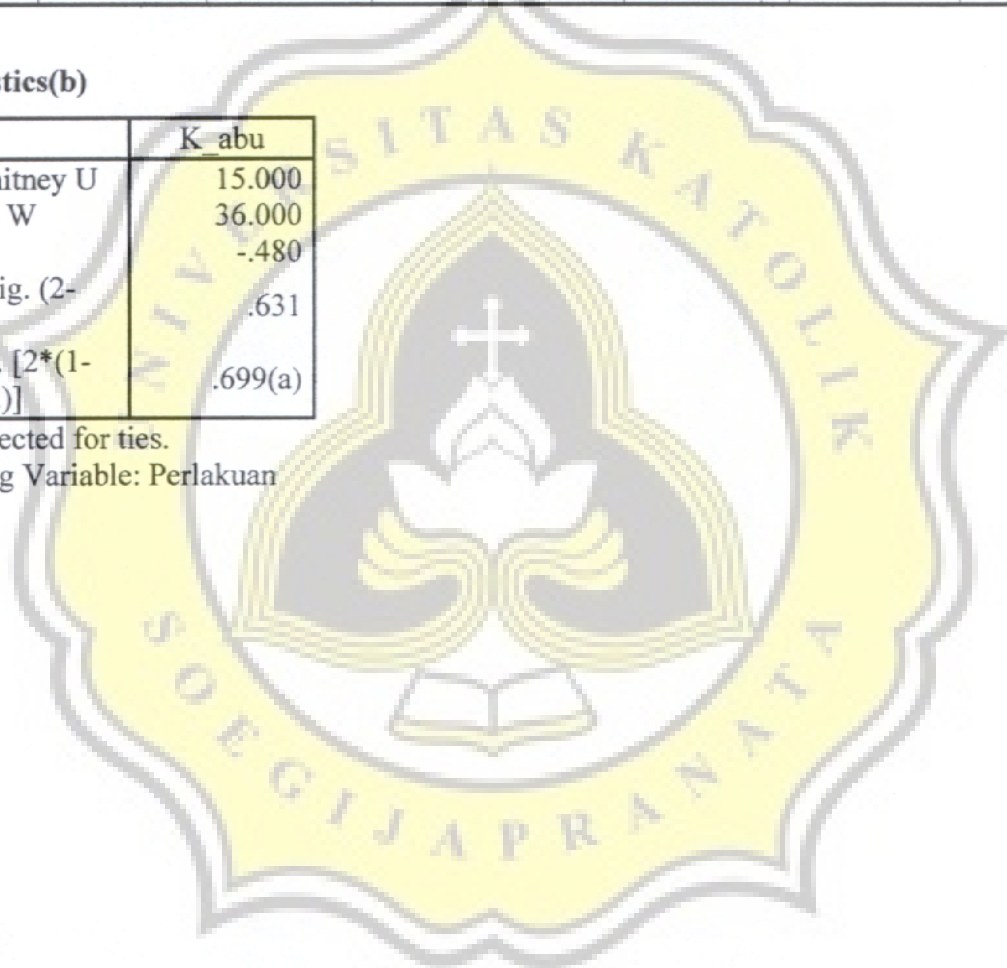
	N	Mean	Std. Deviation	Min	Max	Percentiles		
						25th	50th (Median)	75th
K_abu	36	21.20918	4.775910	9.130	30.483	19.16081	20.10309	25.22733
Perlk	36	3.5000	1.73205	1.00	6.00	2.0000	3.5000	5.0000

Test Statistics(b)

	K_abu
Mann-Whitney U	15.000
Wilcoxon W	36.000
Z	-.480
Asymp. Sig. (2-tailed)	.631
Exact Sig. [2*(1-tailed Sig.)]	.699(a)

a Not corrected for ties.

b Grouping Variable: Perlakuan



KOH,kap VS KOH, CaO**Descriptive Statistics**

	N	Mean	Std. Deviation	Min	Max	Percentiles		
						25th	50th (Median)	75th
K_abu	36	21.20918	4.775910	9.130	30.483	19.16081	20.10309	25.22733
Perlk	36	3.5000	1.73205	1.00	6.00	2.0000	3.5000	5.0000

Test Statistics(b)

	K abu
Mann-Whitney U	18.000
Wilcoxon W	39.000
Z	.000
Asymp. Sig. (2-tailed)	1.000
Exact Sig. [2*(1-tailed Sig.)]	1.000(a)

a Not corrected for ties.

b Grouping Variable: Perlk

KOH,kap VS NaOH,kap**Descriptive Statistics**

	N	Mean	Std. Deviation	Min	Max	Percentiles		
						25th	50th (Median)	75th
K_abu	36	21.20918	4.775910	9.130	30.483	19.16081	20.10309	25.22733
Perlk	36	3.5000	1.73205	1.00	6.00	2.0000	3.5000	5.0000

Test Statistics(b)

	K abu
Mann-Whitney U	18.000
Wilcoxon W	39.000
Z	.000
Asymp. Sig. (2-tailed)	1.000
Exact Sig. [2*(1-tailed Sig.)]	1.000(a)

a Not corrected for ties.

b Grouping Variable: Perlk

KOH,kap VS NaOH,Na**Descriptive Statistics**

	N	Mean	Std. Deviation	Min	Max
K_abu	36	21.2092	4.77591	9.13	30.48
Perlk	36	3.5000	1.73205	1.00	6.00

Test Statistics(b)

	K abu
Mann-Whitney U	18.000
Wilcoxon W	39.000
Z	.000
Asymp. Sig. (2-tailed)	1.000
Exact Sig. [2*(1-tailed Sig.)]	1.000(a)

a Not corrected for ties.

b Grouping Variable: Perlk

KOH,kap VS NaOH,CaO**Descriptive Statistics**

	N	Mean	Std. Deviation	Min	Max
K_abu	36	21.2092	4.77591	9.13	30.48
Perlk	36	3.5000	1.73205	1.00	6.00

Test Statistics(b)

	K abu
Mann-Whitney U	16.000
Wilcoxon W	37.000
Z	-.320
Asymp. Sig. (2-tailed)	.749
Exact Sig. [2*(1-tailed Sig.)]	.818(a)

a Not corrected for ties.

b Grouping Variable: Perlk

KOH,Na VS KOH,CaO**Descriptive Statistics**

	N	Mean	Std. Deviation	Min	Max
K_abu	36	21.2092	4.77591	9.13	30.48
Perlk	36	3.5000	1.73205	1.00	6.00

**Test Statistics(b)**

	K_abu
Mann-Whitney U	18.000
Wilcoxon W	39.000
Z	.000
Asymp. Sig. (2-tailed)	1.000
Exact Sig. [2*(1-tailed Sig.)]	1.000(a)

a Not corrected for ties.

b Grouping Variable: Perl

KOH,Na VS NaOH,kap**Descriptive Statistics**

	N	Mean	Std. Deviation	Min	Max
K_abu	36	21.2092	4.77591	9.13	30.48
Perlk	36	3.5000	1.73205	1.00	6.00

Test Statistics(b)

	K_abu
Mann-Whitney U	6.000
Wilcoxon W	27.000
Z	-1.928
Asymp. Sig. (2-tailed)	.054
Exact Sig. [2*(1-tailed Sig.)]	.065(a)

a Not corrected for ties.

b Grouping Variable: Perlk

KOH,Na VS NaOH,Na**Descriptive Statistics**

	N	Mean	Std. Deviation	Min	Max
K_abu	36	21.2092	4.77591	9.13	30.48
Perlk	36	3.5000	1.73205	1.00	6.00

Test Statistics(b)

	K_abu
Mann-Whitney U	11.000
Wilcoxon W	32.000
Z	-1.121
Asymp. Sig. (2-tailed)	.262
Exact Sig. [2*(1-tailed Sig.)]	.310(a)

a Not corrected for ties.

b Grouping Variable: Perlk

KOH,Na VS NaOH,CaO**Descriptive Statistics**

	N	Mean	Std. Deviation	Min	Max
K_abu	36	21.2092	4.77591	9.13	30.48
Perlk	36	3.5000	1.73205	1.00	6.00

Test Statistics(b)

	K_abu
Mann-Whitney U	11.000
Wilcoxon W	32.000
Z	-1.121
Asymp. Sig. (2-tailed)	.262
Exact Sig. [2*(1-tailed Sig.)]	.310(a)

a Not corrected for ties.

b Grouping Variable: Perlk

KOH,CaO VS NaOH,kap**Descriptive Statistics**

	N	Mean	Std. Deviation	Min	Max
K_abu	36	21.2092	4.77591	9.13	30.48
Perlk	36	3.5000	1.73205	1.00	6.00

Test Statistics(b)

	K_abu
Mann-Whitney U	12.000
Wilcoxon W	33.000
Z	-.964
Asymp. Sig. (2-tailed)	.335
Exact Sig. [2*(1-tailed Sig.)]	.394(a)

a Not corrected for ties.

b Grouping Variable: Perlk

KOH,CaO VS NaOH,Na**Descriptive Statistics**

	N	Mean	Std. Deviation	Min	Max
K_abu	36	21.2092	4.77591	9.13	30.48
Perlk	36	3.5000	1.73205	1.00	6.00

Test Statistics(b)

	K_abu
Mann-Whitney U	16.000
Wilcoxon W	37.000
Z	-.320
Asymp. Sig. (2-tailed)	.749
Exact Sig. [2*(1-tailed Sig.)]	.818(a)

a Not corrected for ties.

b Grouping Variable: Perlk

KOH,CaO VS NaOH,CaO**Descriptive Statistics**

	N	Mean	Std. Deviation	Min	Max
K_abu	36	21.2092	4.77591	9.13	30.48
Perlk	36	3.5000	1.73205	1.00	6.00

Test Statistics(b)

	K_abu
Mann-Whitney U	15.000
Wilcoxon W	36.000
Z	-.480
Asymp. Sig. (2-tailed)	.631
Exact Sig. [2*(1-tailed Sig.)]	.699(a)

a Not corrected for ties.

b Grouping Variable: Perlk

NaOH,kap VS NaOH,Na**Descriptive Statistics**

	N	Mean	Std. Deviation	Min	Max
K_abu	36	21.2092	4.77591	9.13	30.48
Perlk	36	3.5000	1.73205	1.00	6.00

Test Statistics(b)

	K_abu
Mann-Whitney U	18.000
Wilcoxon W	39.000
Z	.000
Asymp. Sig. (2-tailed)	1.000
Exact Sig. [2*(1-tailed Sig.)]	1.000(a)

a Not corrected for ties.

b Grouping Variable: Perlk

NaOH,kap VS NaOH,CaO

Descriptive Statistics

	N	Mean	Std. Deviation	Min	Max
K_abu	36	21.2092	4.77591	9.13	30.48
Perlk	36	3.5000	1.73205	1.00	6.00

Test Statistics(b)

	K_abu
Mann-Whitney U	8.000
Wilcoxon W	29.000
Z	-1.607
Asymp. Sig. (2-tailed)	.108
Exact Sig. [2*(1-tailed Sig.)]	.132(a)

a Not corrected for ties.

b Grouping Variable: Perlk

NaOH,Na VS NaOH,CaO

Descriptive Statistics

	N	Mean	Std. Deviation	Min	Max
K_abu	36	21.2092	4.77591	9.13	30.48
Perlk	36	3.5000	1.73205	1.00	6.00

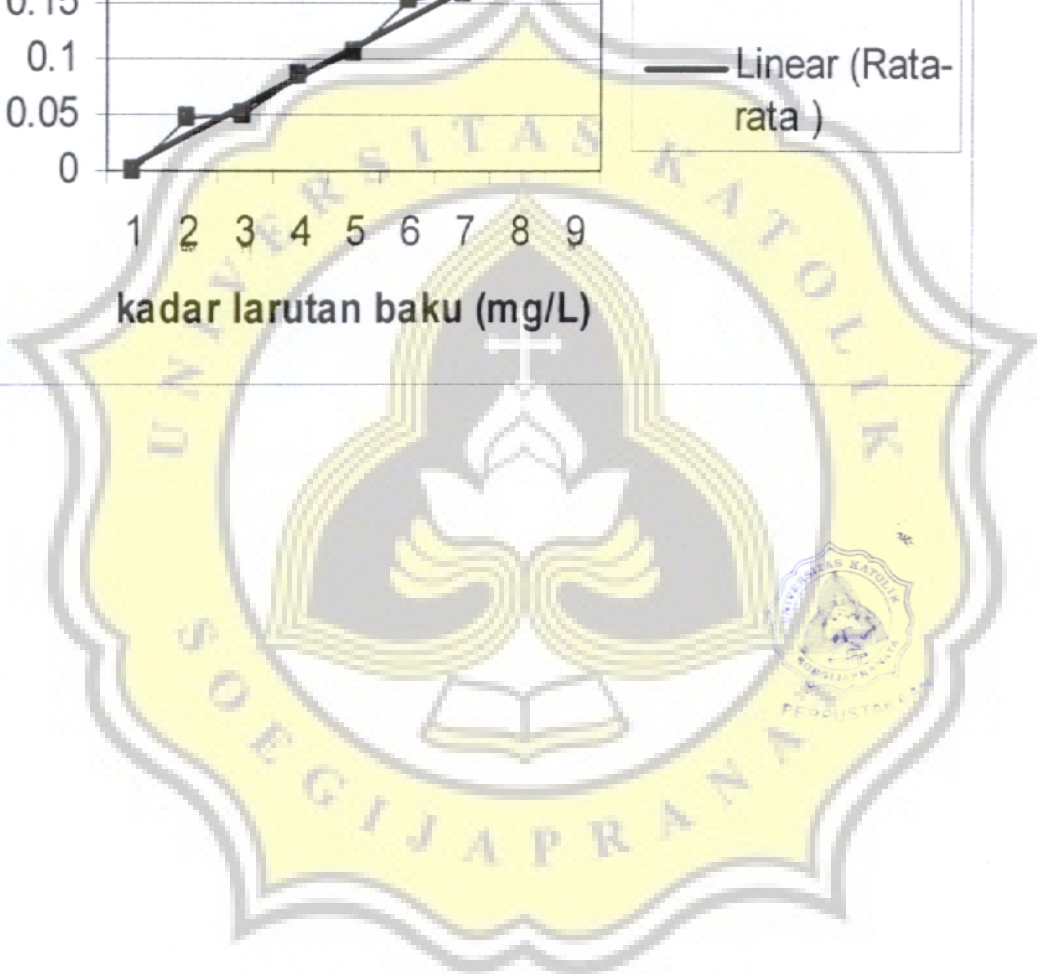
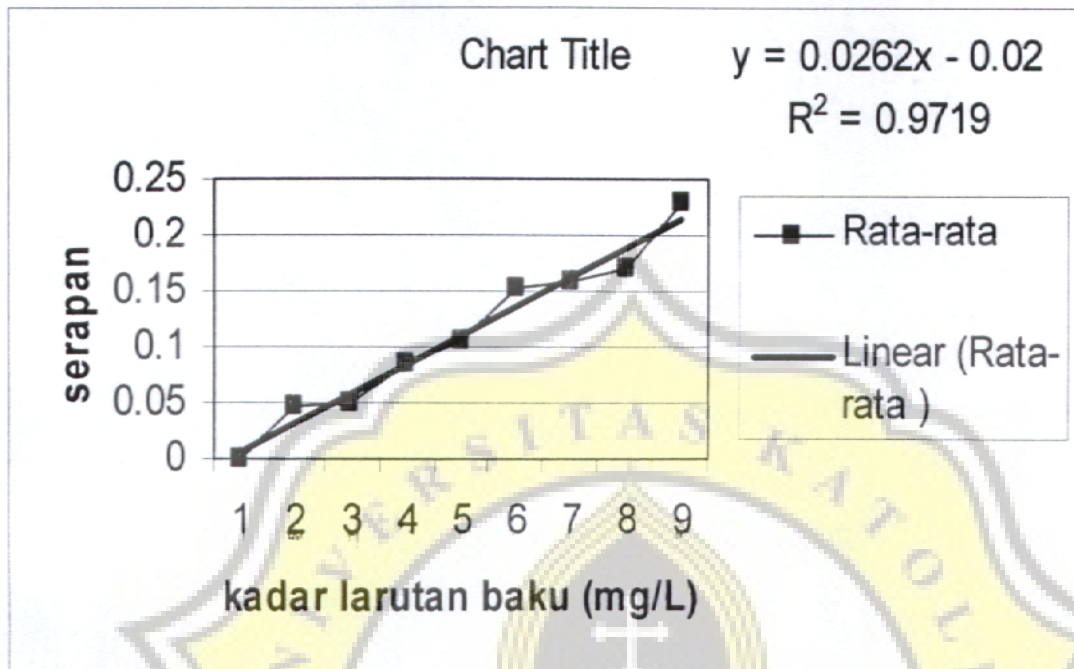
Test Statistics(b)

	K_abu
Mann-Whitney U	12.000
Wilcoxon W	33.000
Z	-.961
Asymp. Sig. (2-tailed)	.337
Exact Sig. [2*(1-tailed Sig.)]	.394(a)

a Not corrected for ties.

b Grouping Variable: Perlk

Lampiran 5. Kurva Standar Kadar Sulfat.



Lampiran 6. Perhitungan Kadar Sulfat

Sampel	Ul	serapan	kadar sulfat	pngcrn	Kadar sulfat	Rata-rata
KOH,kap	1	0.055	2.86259542	7	20.03816794	20.247455
	2	0.0478	2.58778626	7	18.11450382	
	3	0.0549	2.858778626	7	20.01145038	
	4	0.06	3.053435115	7	21.3740458	
	5	0.056	2.900763359	7	20.30534351	
	6	0.061	3.091603053	7	21.64122137	
KOH, Na	1	0.0835	3.950381679	7	27.65267176	24.811705
	2	0.0732	3.557251908	7	24.90076336	
	3	0.0689	3.393129771	7	23.7519084	
	4	0.0636	3.190839695	7	22.33587786	
	5	0.0845	3.988549618	7	27.91984733	
	6	0.0635	3.187022901	7	22.30916031	
KOH, CaO	1	0.0723	3.522900763	7	24.66030534	24.958651
	2	0.0674	3.335877863	7	23.35114504	
	3	0.0754	3.641221374	7	25.48854962	
	4	0.0768	3.694656489	7	25.86259542	
	5	0.0733	3.561068702	7	24.92748092	
	6	0.0753	3.63740458	7	25.46183206	
NaOH,kap	1	0.0855	4.026717557	7	28.1870229	20.42112
	2	0.0567	2.927480916	7	20.49236641	
	3	0.0465	2.538167939	5	12.69083969	
	4	0.0612	3.099236641	5	15.49618321	
	5	0.0854	4.022900763	7	28.16030534	
	6	0.0455	2.5	7	17.5	
NaOH,Na	1	0.057	2.938931298	7	20.57251908	22.851145
	2	0.0701	3.438931298	7	24.07251908	
	3	0.0531	2.790076336	5	13.95038168	
	4	0.1163	5.202290076	5	26.01145038	
	5	0.058	2.977099237	7	20.83969466	
	6	0.0985	4.522900763	7	31.66030534	
NaOH,CaO	1	0.0717	3.5	7	24.5	21.243639
	2	0.0711	3.477099237	7	24.33969466	
	3	0.0628	3.160305344	5	15.80152672	
	4	0.0632	3.175572519	5	15.8778626	
	5	0.0727	3.538167939	7	24.76717557	
	6	0.063	3.167938931	7	22.17557252	

Lampiran 7. Tes Normalitas Kadar Sulfat

Tests of Normality

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
k_sulfat	.095	36	.200(*)	.974	36	.536

* This is a lower bound of the true significance.

a Lilliefors Significance Correction

Lampiran 8. Tes Deskriptif Kadar Sulfat

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
K1	4	19.8845	1.34057	.67028	17.7514	22.0177	18.11	21.37
K2	4	23.6250	3.30682	1.65341	18.3631	28.8869	20.31	27.65
K3	4	24.0792	2.64763	1.32382	19.8662	28.2922	22.31	27.92
N1	4	24.8406	1.11285	.55642	23.0699	26.6114	23.35	25.86
N2	4	24.7672	3.18735	1.59367	19.6954	29.8390	20.49	28.19
N3	4	18.4618	6.75981	3.37990	7.7055	29.2182	12.69	28.16
Total	24	22.6097	4.06639	.83005	20.8926	24.3268	12.69	28.19

Lampiran 9. Tes *Post Hoc* Kadar Sulfat

Duncan

PerlK	N	Subset for alpha = .05	
		1	2
NaOH,CaO	4	18.4618	
KOH,kap	4	19.8845	19.8845
KOH,Na	4	23.6250	23.6250
KOH,CaO	4	24.0792	24.0792
NaOH,Na	4		24.7672
NaOH,kap	4		24.8406
Sig.		.055	.093

Means for groups in homogeneous subsets are displayed.

a Uses Harmonic Mean Sample Size = 4.000.

Lampiran 10. Tes Normalitas Viskositas

Tests of Normality

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Invisko	.133	33	.150	.953	33	.163

a. Lilliefors Significance Correction

Lampiran 11. Tes Deskriptif Viskositas

Descriptives								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
K1	6	38.75000	13.941843	5.691734	24.11893	53.38107	25.000	60.000
K2	6	32.50000	11.640447	4.752192	20.28410	44.71590	21.000	45.000
K3	6	31.83333	10.943796	4.467786	20.34852	43.31814	21.000	45.000
N1	6	2.75000	3.029026	1.236595	-.42877	5.92877	.000	6.000
N2	6	16.00000	.894427	.365148	15.06136	16.93864	15.000	17.000
N3	6	13.00000	3.162278	1.290994	9.68139	16.31861	9.000	17.000
Total	36	22.47222	15.297500	2.549583	17.29629	27.64815	.000	60.000

Lampiran 12. Tes *Post Hoc* Viskositas

Duncan

PerlK	N	Subset for alpha = .05		
		1	2	3
NaOH,kap	6	2.75000		
NaOH,CaO	6	13.00000	13.00000	
NaOH,Na	6		16.00000	
KOH,CaO	6			31.83333
KOH,Na	6			32.50000
KOH,kap	6			38.75000
Sig.		.054	.561	.211

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 13. Tes Normalitas *Gelling Time***Tests of Normality**

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Gel_time	.120	36	.200(*)	.962	36	.248

* This is a lower bound of the true significance.

a Lilliefors Significance Correction

Lampiran 14. Tes Deskriptif *Gelling Time***Descriptives**

Gel. time	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
K1	6	105.8333	21.52595	8.78793	83.2432	128.4234	88.00	136.00
K2	6	137.5000	32.15432	13.12694	103.7561	171.2439	105.00	175.00
K3	6	85.0000	47.75772	19.49701	34.8813	135.1187	22.00	120.00
N1	6	85.0000	6.32456	2.58199	78.3628	91.6372	80.00	95.00
N2	6	76.5000	14.94992	6.10328	60.8110	92.1890	59.00	95.00
N3	6	105.0000	22.46775	9.17242	81.4215	128.5785	78.00	130.00
Total	36	99.1389	32.73718	5.45620	88.0622	110.2156	22.00	175.00

Lampiran 15. Tes *Post Hoc Gelling Time***Duncan**

Perlk	N	Subset for alpha = .05	
		1	2
NaOH,Na	6	76.5000	
KOH,CaO	6	85.0000	
NaOH,kap	6	85.0000	
NaOH,CaO	6	105.0000	105.0000
KOH,kap	6	105.8333	105.8333
KOH,Na	6		137.5000
Sig.		.108	.061

Means for groups in homogeneous subsets are displayed.

a Uses Harmonic Mean Sample Size = 6.000.

Lampiran 16. Tes Normalitas *Gel Strength*

Tests of Normality

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
loggel	.129	36	.138	.924	36	.016

a Lilliefors Significance Correction

Lampiran 17. Tes Deskriptif *Gel Strength*

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
K1	6	7.5592	.33868	.13826	7.2038	7.9146	7.30	8.00
K2	6	6.2264	.69598	.28413	5.4960	6.9568	5.45	7.02
K3	6	12.1733	.29326	.11972	11.8655	12.4810	11.95	12.55
N1	6	2.8217	.28074	.11461	2.5270	3.1163	2.45	3.03
N2	6	1.2317	.30486	.12446	.9117	1.5516	1.02	1.63
N3	6	3.1900	.28000	.11431	2.8962	3.4838	2.98	3.56
Total	36	5.5337	3.72179	.62030	4.2744	6.7930	1.02	12.55

Lampiran 18. Tes *Post Hoc Gel Strength*

Gel_strength

Duncan

Perlk	N	Subset for alpha = .05				
		1	2	3	4	5
NaOH,Na	6	1.2317				
NaOH,kap	6		2.8217			
NaOH,CaO	6		3.1900			
KOH,Na	6			6.2264		
KOH,kap	6				7.5592	
KOH,CaO	6					12.1733
Sig.		1.000	.117	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a Uses Harmonic Mean Sample Size = 6.000.

Lampiran 19. Lembar Kuisioner

Nama :

Tgl. Pelaksanaan :

Dihadapan anda tersedia 6 macam sampel tepung rumput laut semi murni (PES – Processed Eucheuma Seaweed) dan 6 macam sampel larutan gel nya, silahkan beri penilaian terhadap warna dan aroma dari masing-masing sampel yang tersedia dengan mengisi kolom dibawah ini, menggunakan angka 1 sampai 6. **Tidak boleh ada nilai yang sama untuk setiap parameter. Penilaian untuk tiap parameter diurutkan dari nilai tertinggi hingga terendah.**

PES – Processed Eucheuma Seaweed

Sampel	Warna	Aroma
415		
316		
715		
124		
629		
328		

Larutan gel dari PES – Processed Eucheuma Seaweed

Sampel	Warna	Aroma
416		
513		
915		
729		
428		
527		

Penilaian :

Warna : 1 → 6
 Paling Gelap → Paling Putih

Aroma : 1 → 6
 Paling Tidak Suka → Paling Suka

Lampiran 20. Perhitungan Analisa Sensoris

Ranking yang tersedia untuk tiap parameter yang diuji saat analisa sensoris tepung karaginan *grade Processed Eucheuma Seaweed/PES* dan larutan gelynya adalah sebagai berikut :

Warna : 1 → Paling Gelap

6 → Paling Putih

Aroma : 1 → Paling Tidak Suka

6 → Paling Suka

Perhitungan rata-rata nilai ranking pada tiap perlakuan dilakukan dengan menghitung *weighted score* yaitu nilai tiap ranking dikalikan dengan frekuensi (Ressureccion, 1998). *Weighted score* dari ranking 1 sampai 6 dijumlah untuk mendapatkan *rank totals*. Kemudian *rank totals* dibagi jumlah panelis sehingga didapatkan nilai ranking rata-rata untuk tiap perlakuan yang diuji.

Weighted Score = Nilai x Frekuensi

Rank Totals = *Weighted Score* Nilai 1 + ... + *Weighted Score* Nilai 6

Rata-rata Nilai Ranking = $\frac{\text{Rank Totals}}{\text{Jml panelis}}$

Lampiran 21. Penghitungan Rendemen

Rendemen (%) = $\frac{\text{Berat akhir}}{\text{Berat awal}} \times 100\%$