8. LAMPIRAN

8.1.Uji Normalitas

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
berat_gel	.156	27	.088	.933	27	.083
ph_sebelum	.133	27	.200*	.961	27	.383
ph_sesudah	.120	27	.200*	.947	27	.183
kekuatan_gel	.129	27	.200*	.966	27	.505
warna_l	.106	27	.200*	.958	27	.327
warna_a	.125	27	.200*	.965	27	.484
warna_b	.093	27	.200*	.971	27	.639
berat_tepung	.138	27	.200*	.948	27	.192
ph_tepung	.107	27	.200*	.972	27	.664
kadar_air	.127	27	.200*	.974	27	.711
kadar_protein	.147	27	.142	.936	27	.095
rendemen	.128	27	.200*	.957	27	.322

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

a. Lilliefors Significance Correction

8.2.Berat Gel

8.2.1. Uji Homogenitas

Levene's Test of Equality of Error Variances[a]

Dependent Variable: berat_gel

F	df1	df2	Sig.
1.765	8	18	.151

Tests the null hypothesis that the error variance of the dependent variable is equal across goups.

a. Design: Intercept + asam + waktu + asam * waktu

8.2.2. Uji *Two Way* ANOVA

Tests of Between-Subjects Effects

Dependent Variable: berat_gel

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	54667.536[a]	8	6833.442	7.678	.000
Intercept	7358206.004	1	7358206.004	8267.733	.000
asam	1876.531	2	938.265	1.054	.369
waktu	52457.344	2	26228.672	29.471	.000
asam * waktu	333.661	4	83.415	.094	.983
Error	16019.834	18	889.991		
Total	7428893.374	27			
Corrected Total	70687.370	26			

a. R Squared = .773 (Adjusted R Squared = .673)

berat_gel

Duncan[a,b]

asam	N	Subset 1
1%	9	510.9411
2%	9	524.1467
3%	9	531.0333
Sig.		.192

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 889.991.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

berat_gel

Duncan[a,b]

waktu	N	Subset 1	Subset 2
24 jam	9	459.8778	
48 jam	9		549.1022
72 jam	9		557.1411
Sig.		1.000	.575

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 889.991.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

8.2.3. Uji One Way ANOVA

ANOVA

berat_gel

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	253.766	2	126.883	.102	.905
Within Goups	7466.080	6	1244.347		
Total	7719.846	8			

berat_gel

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05 1
1% 24 jam	3	455.3500
2% 24 jam	3	456.9533
3% 24 jam	3	467.3300
Sig.		.701

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

berat_gel

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	825.206	2	412.603	.833	.479
Within Goups	2971.089	6	495.182		
Total	3796.296	8			

berat_gel

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
1% 48 jam	3	535.7400
2% 48 jam	3	553.8800
3% 48 jam	3	557.6867
Sig.		.287

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

berat_gel

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	1131.219	2	565.610	.608	.575
Within Goups	5582.665	6	930.444		
Total	6713.884	8			

berat_gel

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
1% 72 jam	3	541.7333
2% 72 jam	3	561.6067
3% 72 jam	3	568.0833
Sig.		.345

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

berat_gel

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	13960.552	2	6980.276	5.079	.051
Within Goups	8246.494	6	1374.416		
Total	22207.047	8			

berat_gel

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 24 jam	3	455.3500	
1% 48 jam	3		535.7400
1% 72 jam	3		541.7333
Sig.		1.000	.850

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

berat_gel

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	20406.800	2	10203.400	13.084	.006
Within Goups	4678.929	6	779.821		
Total	25085.729	8			

berat_gel

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
2% 24 jam	3	456.9533	
2% 48 jam	3		553.8800
2% 72 jam	3		561.6067
Sig.		1.000	.746

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

berat_gel

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	18423.652	2	9211.826	17.862	.003
Within Goups	3094.411	6	515.735		
Total	21518.063	8			

berat_gel

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
3% 24 jam	3	467.3300	
3% 48 jam	3		557.6867
3% 72 jam	3		568.0833
Sig.		1.000	.595

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

8.3.pH Sebelum Penetralan

8.3.1. Uji Homogenitas

Levene's Test of Equality of Error Variances[a]

Dependent Variable: ph_sebelum

F	df1	df2	Sig.
1.718	8	18	.162

Tests the null hypothesis that the error variance of the dependent variable is equal across goups.

a. Design: Intercept + asam + waktu + asam * waktu

8.3.2. Uji *Two Way* ANOVA

Tests of Between-Subjects Effects

Dependent Variable: ph_sebelum

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.775[a]	8	.097	9.895	.000
Intercept	500.349	1	500.349	51113.935	.000
asam	.376	2	.188	19.201	.000
waktu	.375	2	.187	19.135	.000
asam * waktu	.024	4	.006	.621	.653
Error	.176	18	.010		
Total	501.300	27			
Corrected Total	.951	26			

a. R Squared = .815 (Adjusted R Squared = .732)

ph_sebelum

Duncan[a,b]

asam	N	Subset		
		1	2	3
3%	9	4.1578		
2%	9		4.3100	
1%	9			4.4467
Sig.		1.000	1.000	1.000

Means for goups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = .010.
a. Uses Harmonic Mean Sample Size = 9.000.
b. Alpha = ,05.

ph_sebelum

Duncan[a,b]

waktu	N	Subset 1	Subset 2
72 jam	9	4.1789	
48 jam	9	4.2733	
24 jam	9		4.4622
Sig.		.058	1.000

Means for goups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = .010.
a. Uses Harmonic Mean Sample Size = 9.000.
b. Alpha = ,05.

8.3.3. Uji One Way ANOVA

ANOVA

ph_sebelum

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.182	2	.091	14.865	.005
Within Goups	.037	6	.006		
Total	.218	8			

ph_sebelum

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05 1	Subset for alpha = 0.05 2
3% 24 jam	3	4.2667	
2% 24 jam	3		4.5200

1% 24 jam	3		4.6000
Sig.		1.000	.257

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_sebelum

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.125	2	.063	10.327	.011
Within Goups	.036	6	.006		
Total	.161	8			

ph_sebelum

Duncan[a]

		Subset for alpha = 0.05	
asam_waktu	N	1	2
3% 48 jam	3	4.1400	
2% 48 jam	3	4.2533	
1% 48 jam	3		4.4267
Sig.		.125	1.000

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_sebelum

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.093	2	.047	2.718	.144
Within Goups	.103	6	.017		
Total	.197	8			

ph_sebelum

Duncan[a]

		Subset for alpha
asam_waktu	N	= 0.05

		1
3% 72 jam	3	4.0667
2% 72 jam	3	4.1567
1% 72 jam	3	4.3133
Sig.		.068

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_sebelum

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.125	2	.063	4.181	.073
Within Goups	.090	6	.015		
Total	.215	8			

ph_sebelum

Duncan[a]

		Subset for alpha = 0.05	
asam_waktu	N	1	2
1% 72 jam	3	4.3133	
1% 48 jam	3	4.4267	4.4267
1% 24 jam	3		4.6000
Sig.		.300	.133

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_sebelum

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.212	2	.106	9.970	.012
Within Goups	.064	6	.011		
Total	.276	8			

ph_sebelum

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
2% 72 jam	3	4.1567	
2% 48 jam	3	4.2533	
2% 24 jam	3		4.5200
Sig.		.295	1.000

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_sebelum

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.061	2	.031	8.178	.019
Within Goups	.023	6	.004		
Total	.084	8			

ph_sebelum

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
3% 72 jam	3	4.0667	
3% 48 jam	3	4.1400	
3% 24 jam	3		4.2667
Sig.		.193	1.000

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

8.4.pH Sesudah Penetralan

8.4.1. Uji Homogenitas

Levene's Test of Equality of Error Variances[a]

Dependent Variable: ph_sesudah

F	df1	df2	Sig.
4.257	8	18	.005

Tests the null hypothesis that the error variance of the dependent variable is equal across goups.

a. Design: Intercept + asam + waktu + asam * waktu

8.4.2. Uji *Two Way* ANOVA

Tests of Between-Subjects Effects

Dependent Variable: ph_sesudah

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.908[a]	8	.113	2.307	.067
Intercept	1141.660	1	1141.660	23207.969	.000
asam	.260	2	.130	2.646	.098
waktu	.564	2	.282	5.737	.012
asam * waktu	.083	4	.021	.422	.791
Error	.885	18	.049		
Total	1143.454	27			
Corrected Total	1.793	26			

a. R Squared = .506 (Adjusted R Squared = .287)

ph_sesudah

Duncan[a,b]

asam	N	Subset	
		1	2
1%	9	6.3967	
2%	9	6.4778	6.4778
3%	9		6.6333
Sig.		.448	.154

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .049.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

ph_sesudah

Duncan[a,b]

waktu	N	Subset 1	Subset 2
24 jam	9	6.3644	
48 jam	9	6.4411	
72 jam	9		6.7022
Sig.		.473	1.000

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .049.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

8.4.3. Uji One Way ANOVA

ANOVA

ph_sesudah

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.056	2	.028	.388	.694
Within Goups	.431	6	.072		
Total	.487	8			

ph_sesudah

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
1% 24 jam	3	6.2600
2% 24 jam	3	6.3833
3% 24 jam	3	6.4500
Sig.		.433

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_sesudah

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.026	2	.013	.335	.728
Within Goups	.230	6	.038		
Total	.256	8			

ph_sesudah

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
1% 48 jam	3	6.4033
2% 48 jam	3	6.4033
3% 48 jam	3	6.5167
Sig.		.518

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_sesudah

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.262	2	.131	3.508	.098
Within Goups	.224	6	.037		
Total	.486	8			

ph_sesudah

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 72 jam	3	6.5267	
2% 72 jam	3	6.6467	6.6467
3% 72 jam	3		6.9333
Sig.		.476	.119

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_sesudah

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.107	2	.053	.911	.451
Within Goups	.352	6	.059		
Total	.459	8			

ph_sesudah

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
1% 24 jam	3	6.2600
1% 48 jam	3	6.4033
1% 72 jam	3	6.5267

Sig.		.240

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_sesudah

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.129	2	.064	.804	.490
Within Goups	.481	6	.080		
Total	.610	8			

ph_sesudah

Duncan[a]

		Subset for alpha = 0.05
asam_waktu	N	1
2% 24 jam	3	6.3833
2% 48 jam	3	6.4033
2% 72 jam	3	6.6467
Sig.		.312

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_sesudah

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.412	2	.206	23.509	.001
Within Goups	.053	6	.009		
Total	.464	8			

ph_sesudah

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
3% 24 jam	3	6.4500	
3% 48 jam	3	6.5167	
3% 72 jam	3		6.9333
Sig.		.416	1.000

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

8.5.Kekuatan Gel

8.5.1. Uji Homogenitas

Levene's Test of Equality of Error Variances[a]

Dependent Variable: kekuatan_gel

F	df1	df2	Sig.
1.038	8	18	.445

Tests the null hypothesis that the error variance of the dependent variable is equal across goups.

a. Design: Intercept + asam + waktu + asam * waktu

8.5.2. Uji *Two Way* ANOVA

Tests of Between-Subjects Effects

Dependent Variable: kekuatan_gel

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1147.741[a]	8	143.468	7.935	.000
Intercept	18948.191	1	18948.191	1048.011	.000
asam	1045.583	2	522.791	28.915	.000
waktu	100.685	2	50.342	2.784	.088
asam * waktu	1.473	4	.368	.020	.999
Error	325.443	18	18.080		
Total	20421.374	27			

Corrected Total	1473.183	26			

a. R Squared = .779 (Adjusted R Squared = .681)

kekuatan_gel

Duncan[a,b]

asam	N	Subset		
		1	2	3
1%	9	18.7431		
2%	9		26.7510	
3%	9			33.9796
Sig.		1.000	1.000	1.000

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 18.080.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

kekuatan_gel

Duncan[a,b]

waktu	N	Subset	
		1	2
24 jam	9	24.7411	
48 jam	9	25.5507	25.5507
72 jam	9		29.1819
Sig.		.691	.087

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 18.080.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

8.5.3. Uji *One Way* ANOVA

ANOVA

kekuatan_gel

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	375.488	2	187.744	11.146	.010
Within Goups	101.063	6	16.844		
Total	476.551	8			

kekuatan_gel

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 24 jam	3	16.7010	
2% 24 jam	3		25.0063
3% 24 jam	3		32.5160
Sig.		1.000	.066

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kekuatan_gel

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	343.939	2	171.970	8.747	.017
Within Goups	117.961	6	19.660		
Total	461.900	8			

kekuatan_gel

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 48 jam	3	17.7317	
2% 48 jam	3	26.0733	26.0733
3% 48 jam	3		32.8470

Sig.		.061	.111

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kekuatan_gel

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	327.629	2	163.814	9.236	.015
Within Goups	106.418	6	17.736		
Total	434.047	8			

kekuatan_gel

Duncan[a]

		Subset for alpha = 0.05	
asam_waktu	N	1	2
1% 72 jam	3	21.7967	
2% 72 jam	3	29.1733	29.1733
3% 72 jam	3		36.5757
Sig.		.076	.075

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kekuatan_gel

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	43.552	2	21.776	.712	.528
Within Goups	183.478	6	30.580		
Total	227.030	8			

kekuatan_gel

Duncan[a]

		Subset for alpha
asam_waktu	N	= 0.05

		1
1% 24 jam	3	16.7010
1% 48 jam	3	17.7317
1% 72 jam	3	21.7967
Sig.		.317

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kekuatan_gel

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	28.112	2	14.056	1.209	.362
Within Goups	69.754	6	11.626		
Total	97.867	8			

kekuatan_gel

Duncan[a]

		Subset for alpha = 0.05
asam_waktu	N	1
2% 24 jam	3	25.0063
2% 48 jam	3	26.0733
2% 72 jam	3	29.1733
Sig.		.198

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kekuatan_gel

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	30.493	2	15.247	1.267	.348
Within Goups	72.210	6	12.035		
Total	102.703	8			

kekuatan_gel

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
3% 24 jam	3	32.5160
3% 48 jam	3	32.8470
3% 72 jam	3	36.5757
Sig.		.215

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

8.6.Warna (L*) Gel

8.6.1. Uji Homogenitas

Levene's Test of Equality of Error Variances[a]

Dependent Variable: warna_l

F	df1	df2	Sig.
2.450	8	18	.055

Tests the null hypothesis that the error variance of the dependent variable is equal across goups.

a. Design: Intercept + asam + waktu + asam * waktu

8.6.2. Uji Two Way ANOVA

Tests of Between-Subjects Effects

Dependent Variable: warna_l

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	168.656[a]	8	21.082	1.796	.144
Intercept	38059.554	1	38059.554	3242.926	.000
asam	141.948	2	70.974	6.047	.010
waktu	19.320	2	9.660	.823	.455
asam * waktu	7.388	4	1.847	.157	.957
Error	211.251	18	11.736		

Total	38439.461	27			
Corrected Total	379.907	26			

a. R Squared = .444 (Adjusted R Squared = .197)

warna_l

Duncan[a,b]

asam	N	Subset 1	Subset 2
1%	9	34.4978	
2%	9		38.1078
3%	9		40.0289
Sig.		1.000	.250

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 11.736.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

warna_l

Duncan[a,b]

waktu	N	Subset 1
72 jam	9	36.4033
48 jam	9	37.8056
24 jam	9	38.4256
Sig.		.251

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 11.736.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

8.6.3. Uji *One Way* ANOVA

ANOVA

warna_l

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	34.545	2	17.272	.880	.462
Within Goups	117.805	6	19.634		
Total	152.350	8			

warna_l

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
1% 24 jam	3	36.0700
2% 24 jam	3	38.3400
3% 24 jam	3	40.8667
Sig.		.247

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_l

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	57.758	2	28.879	2.054	.209
Within Goups	84.372	6	14.062		
Total	142.131	8			

warna_l

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
1% 48 jam	3	34.5633
2% 48 jam	3	38.1067

3% 48 jam	3	40.7467
Sig.		.099

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_l

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	57.032	2	28.516	18.856	.003
Within Goups	9.074	6	1.512		
Total	66.107	8			

warna_l

Duncan[a]

		Subset for alpha = 0.05	
asam_waktu	N	1	2
1% 72 jam	3	32.8600	
2% 72 jam	3		37.8767
3% 72 jam	3		38.4733
Sig.		1.000	.574

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_l

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	15.475	2	7.738	1.355	.327
Within Goups	34.251	6	5.709		
Total	49.727	8			

warna_l

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
1% 72 jam	3	32.8600
1% 48 jam	3	34.5633
1% 24 jam	3	36.0700
Sig.		.163

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_l

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.322	2	.161	.018	.982
Within Goups	53.512	6	8.919		
Total	53.834	8			

warna_l

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
2% 72 jam	3	37.8767
2% 48 jam	3	38.1067
2% 24 jam	3	38.3400
Sig.		.860

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_l

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	10.910	2	5.455	.265	.776
Within Goups	123.488	6	20.581		
Total	134.398	8			

warna_l

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
3% 72 jam	3	38.4733
3% 48 jam	3	40.7467
3% 24 jam	3	40.8667
Sig.		.554

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

8.7.Warna (a*) Gel

8.7.1. Uji Homogenitas

Levene's Test of Equality of Error Variances[a]

Dependent Variable: warna_a

F	df1	df2	Sig.
3.224	8	18	.019

Tests the null hypothesis that the error variance of the dependent variable is equal across goups.

a. Design: Intercept + asam + waktu + asam * waktu

8.7.2. Uji Two Way ANOVA

Tests of Between-Subjects Effects

Dependent Variable: warna_a

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	15.755[a]	8	1.969	8.421	.000
Intercept	436982.889	1	436982.889	1868660.893	.000
asam	6.669	2	3.334	14.259	.000
waktu	7.920	2	3.960	16.935	.000
asam * waktu	1.165	4	.291	1.246	.327
Error	4.209	18	.234		
Total	437002.853	27			
Corrected Total	19.964	26			

a. R Squared = .789 (Adjusted R Squared = .695)

warna_a

Duncan[a,b]

asam	N	Subset 1	Subset 2
1%	9	126.7056	
2%	9	127.0589	
3%	9		127.8911
Sig.		.139	1.000

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .234.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

warna_a

Duncan[a,b]

waktu	N	Subset 1	Subset 2
24 jam	9	126.4811	

48 jam	9		127.4078
72 jam	9		127.7667
Sig.		1.000	.133

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .234.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

8.7.3. Uji *One Way* ANOVA

ANOVA

warna_a

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	4.052	2	2.026	11.707	.008
Within Goups	1.038	6	.173		
Total	5.090	8			

warna_a

Duncan[a]

		Subset for alpha = 0.05	
asam_waktu	N	1	2
1% 24 jam	3	125.8167	
2% 24 jam	3	126.2267	
3% 24 jam	3		127.4000
Sig.		.273	1.000

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_a

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.427	2	.214	2.205	.191
Within Goups	.581	6	.097		
Total	1.008	8			

warna_a

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
1% 48 jam	3	127.1367
2% 48 jam	3	127.4167
3% 48 jam	3	127.6700
Sig.		.089

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_a

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	3.355	2	1.678	3.887	.083
Within Goups	2.590	6	.432		
Total	5.945	8			

warna_a

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 72 jam	3	127.1633	
2% 72 jam	3	127.5333	127.5333
3% 72 jam	3		128.6033
Sig.		.516	.093

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_a

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	3.557	2	1.778	5.069	.051
Within Goups	2.105	6	.351		
Total	5.662	8			

warna_a

Duncan[a]

		Subset for alpha = 0.05	
asam_waktu	N	1	2
1% 24 jam	3	125.8167	
1% 48 jam	3		127.1367
1% 72 jam	3		127.1633
Sig.		1.000	.958

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_a

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	3.137	2	1.569	8.274	.019
Within Goups	1.137	6	.190		
Total	4.274	8			

warna_a

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
2% 24 jam	3	126.2267	
2% 48 jam	3		127.4167
2% 72 jam	3		127.5333
Sig.		1.000	.754

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_a

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	2.392	2	1.196	7.422	.024
Within Goups	.967	6	.161		
Total	3.359	8			

warna_a

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
3% 24 jam	3	127.4000	
3% 48 jam	3	127.6700	
3% 72 jam	3		128.6033
Sig.		.442	1.000

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

8.8.Warna (b*) Gel

8.8.1. Uji Homogenitas

Levene's Test of Equality of Error Variances[a]

Dependent Variable: warna_b

F	df1	df2	Sig.
6.308	8	18	.001

Tests the null hypothesis that the error variance of the dependent variable is equal across goups.

a. Design: Intercept + asam + waktu + asam * waktu

8.8.2. Uji Two Way ANOVA

Tests of Between-Subjects Effects

Dependent Variable: warna_b

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	35.533[a]	8	4.442	5.398	.001
Intercept	427883.745	1	427883.745	520005.631	.000
asam	7.385	2	3.692	4.487	.026
waktu	27.271	2	13.636	16.571	.000
asam * waktu	.877	4	.219	.266	.896
Error	14.811	18	.823		
Total	427934.089	27			
Corrected Total	50.344	26			

a. R Squared = .706 (Adjusted R Squared = .575)

warna_b

Duncan[a,b]

asam	N	Subset 1	Subset 2
1%	9	125.2744	
2%	9	125.8344	125.8344
3%	9		126.5522
Sig.		.207	.111

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .823.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

warna_b

Duncan[a,b]

waktu	N	Subset 1	Subset 2	Subset 3
24 jam	9	124.5900		
48 jam	9		126.0322	
72 jam	9			127.0389
Sig.		1.000	1.000	1.000

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .823.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

8.8.3. Uji *One Way* ANOVA

ANOVA

warna_b

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	4.404	2	2.202	9.599	.013
Within Goups	1.376	6	.229		
Total	5.781	8			

warna_b

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05 1	Subset for alpha = 0.05 2
1% 24 jam	3	123.7033	
2% 24 jam	3	124.6533	124.6533
3% 24 jam	3		125.4133
Sig.		.051	.100

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_b

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	1.723	2	.861	.566	.596
Within Goups	9.139	6	1.523		
Total	10.862	8			

warna_b

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
1% 48 jam	3	125.4567
2% 48 jam	3	126.1233
3% 48 jam	3	126.5167
Sig.		.348

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_b

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	2.135	2	1.067	1.491	.298
Within Goups	4.296	6	.716		
Total	6.430	8			

warna_b

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
1% 72 jam	3	126.6633
2% 72 jam	3	126.7267
3% 72 jam	3	127.7267
Sig.		.187

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_b

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	13.292	2	6.646	6.202	.035
Within Goups	6.430	6	1.072		
Total	19.721	8			

warna_b

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 24 jam	3	123.7033	
1% 48 jam	3	125.4567	125.4567
1% 72 jam	3		126.6633
Sig.		.083	.203

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_b

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	6.824	2	3.412	3.869	.083
Within Goups	5.291	6	.882		
Total	12.114	8			

warna_b

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
2% 24 jam	3	124.6533	
2% 48 jam	3	126.1233	126.1233
2% 72 jam	3		126.7267
Sig.		.104	.461

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

warna_b

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	8.033	2	4.016	7.796	.021
Within Goups	3.091	6	.515		
Total	11.124	8			

warna_b

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
3% 24 jam	3	125.4133	
3% 48 jam	3	126.5167	126.5167
3% 72 jam	3		127.7267
Sig.		.109	.085

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

8.9.Berat Tepung Gelatin

8.9.1. Uji Homogenitas

Levene's Test of Equality of Error Variances[a]

Dependent Variable: berat_tepung

F	df1	df2	Sig.
2.389	8	18	.060

Tests the null hypothesis that the error variance of the dependent variable is equal across goups.

a. Design: Intercept + asam + waktu + asam * waktu

8.9.2. Uji *Two Way* ANOVA

Tests of Between-Subjects Effects

Dependent Variable: berat_tepung

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	178.351[a]	8	22.294	6.413	.001
Intercept	4018.680	1	4018.680	1156.044	.000
asam	88.366	2	44.183	12.710	.000
waktu	79.471	2	39.736	11.431	.001
asam * waktu	10.514	4	2.628	.756	.567
Error	62.572	18	3.476		
Total	4259.603	27			
Corrected Total	240.923	26			

a. R Squared = .740 (Adjusted R Squared = .625)

berat_tepung

Duncan[a,b]

asam	N	Subset 1	Subset 2
1%	9	9.6467	
2%	9		13.3367
3%	9		13.6167
Sig.		1.000	.754

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 3.476.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

berat_tepung

Duncan[a,b]

waktu	N	Subset 1	Subset 2	Subset 3
24 jam	9	10.1411		
48 jam	9		12.1178	
72 jam	9			14.3411
Sig.		1.000	1.000	1.000

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 3.476.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

8.9.3. Uji One Way ANOVA

ANOVA

berat_tepung

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	30.600	2	15.300	9.736	.013
Within Goups	9.429	6	1.571		
Total	40.029	8			

berat_tepung

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 24 jam	3	7.5433	
2% 24 jam	3		11.2433
3% 24 jam	3		11.6367
Sig.		1.000	.714

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

berat_tepung

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	44.811	2	22.405	3.551	.096
Within Goups	37.855	6	6.309		
Total	82.665	8			

berat_tepung

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 48 jam	3	9.0700	
3% 48 jam	3	12.9333	12.9333
2% 48 jam	3		14.3500
Sig.		.109	.516

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

berat_tepung

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	23.469	2	11.734	4.605	.061
Within Goups	15.289	6	2.548		
Total	38.758	8			

berat_tepung

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 72 jam	3	12.3267	
2% 72 jam	3	14.4167	14.4167
3% 72 jam	3		16.2800
Sig.		.160	.203

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

berat_tepung

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	35.817	2	17.908	15.679	.004
Within Goups	6.853	6	1.142		
Total	42.670	8			

berat_tepung

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 24 jam	3	7.5433	
1% 48 jam	3	9.0700	
1% 72 jam	3		12.3267
Sig.		.131	1.000

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

berat_tepung

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	19.726	2	9.863	1.589	.279
Within Goups	37.246	6	6.208		
Total	56.972	8			

berat_tepung

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
2% 24 jam	3	11.2433
2% 48 jam	3	14.3500
2% 72 jam	3	14.4167
Sig.		.182

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

berat_tepung

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	34.442	2	17.221	5.593	.043
Within Goups	18.473	6	3.079		
Total	52.915	8			

berat_tepung

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
3% 24 jam	3	11.6367	
3% 48 jam	3	12.9333	12.9333
3% 72 jam	3		16.2800
Sig.		.400	.058

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

8.10. pH Tepung Gelatin

8.10.1. Uji Homogenitas

Levene's Test of Equality of Error Variances[a]

Dependent Variable: ph_tepung

F	df1	df2	Sig.
2.569	8	18	.046

Tests the null hypothesis that the error variance of the dependent variable is equal across goups.

a. Design: Intercept + asam + waktu + asam * waktu

8.10.2. Uji *Two Way* ANOVA

Tests of Between-Subjects Effects

Dependent Variable: ph_tepung

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	6.935[a]	8	.867	22.403	.000
Intercept	573.069	1	573.069	14810.828	.000
asam	4.098	2	2.049	52.956	.000
waktu	2.445	2	1.222	31.593	.000
asam * waktu	.392	4	.098	2.532	.076
Error	.696	18	.039		
Total	580.701	27			

Corrected Total	7.631	26			

a. R Squared = .909 (Adjusted R Squared = .868)

ph_tepung

Duncan[a,b]

asam	N	Subset		
		1	2	3
1%	9	4.1033		
2%	9		4.6656	
3%	9			5.0522
Sig.		1.000	1.000	1.000

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .039.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

ph_tepung

Duncan[a,b]

waktu	N	Subset		
		1	2	3
24 jam	9	4.2144		
48 jam	9		4.6611	
72 jam	9			4.9456
Sig.		1.000	1.000	1.000

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .039.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

8.10.3. Uji *One Way* ANOVA

ANOVA

ph_tepung

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	1.251	2	.625	7.634	.022
Within Goups	.491	6	.082		
Total	1.742	8			

ph_tepung

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 24 jam	3	3.7200	
2% 24 jam	3		4.3033
3% 24 jam	3		4.6200
Sig.		1.000	.224

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_tepung

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.674	2	.337	14.052	.005
Within Goups	.144	6	.024		
Total	.818	8			

ph_tepung

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 48 jam	3	4.2833	
2% 48 jam	3		4.7767
3% 48 jam	3		4.9233
Sig.		1.000	.290

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_tepung

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	2.565	2	1.282	126.139	.000
Within Goups	.061	6	.010		
Total	2.626	8			

ph_tepung

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05		
		1	2	3
1% 72 jam	3	4.3067		
2% 72 jam	3		4.9167	
3% 72 jam	3			5.6133
Sig.		1.000	1.000	1.000

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_tepung

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.662	2	.331	13.056	.007
Within Goups	.152	6	.025		
Total	.814	8			

ph_tepung

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 24 jam	3	3.7200	
1% 48 jam	3		4.2833
1% 72 jam	3		4.3067

Sig.		1.000	.863

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_tepung

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.620	2	.310	10.435	.011
Within Goups	.178	6	.030		
Total	.798	8			

ph_tepung

Duncan[a]

		Subset for alpha = 0.05	
asam_waktu	N	1	2
2% 24 jam	3	4.3033	
2% 48 jam	3		4.7767
2% 72 jam	3		4.9167
Sig.		1.000	.358

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

ph_tepung

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	1.555	2	.777	12.740	.007
Within Goups	.366	6	.061		
Total	1.921	8			

ph_tepung

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
3% 24 jam	3	4.6200	
3% 48 jam	3	4.9233	
3% 72 jam	3		5.6133
Sig.		.183	1.000

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

8.11. Kadar Air Tepung Gelatin

8.11.1. Uji Homogenitas

Levene's Test of Equality of Error Variances[a]

Dependent Variable: kadar_air

F	df1	df2	Sig.
2.285	8	18	.069

Tests the null hypothesis that the error variance of the dependent variable is equal across goups.

a. Design: Intercept + asam + waktu + asam * waktu

8.11.2. Uji *Two Way* ANOVA

Tests of Between-Subjects Effects

Dependent Variable: kadar_air

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	6.420[a]	8	.802	2.521	.049
Intercept	532.090	1	532.090	1671.680	.000
asam	2.255	2	1.127	3.542	.050
waktu	2.104	2	1.052	3.304	.060
asam * waktu	2.061	4	.515	1.619	.213
Error	5.729	18	.318		
Total	544.239	27			

Corrected Total	12.149	26			

a. R Squared = .528 (Adjusted R Squared = .319)

kadar_air

Student-Newman-Keuls[a,b]

asam	N	Subset	
		1	2
1%	9	4.1456	
3%	9	4.3400	4.3400
2%	9		4.8322
Sig.		.474	.081

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .318.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

kadar_air

Student-Newman-Keuls[a,b]

waktu	N	Subset
		1
72 jam	9	4.0522
48 jam	9	4.5656
24 jam	9	4.7000
Sig.		.063

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .318.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

8.11.3. Uji *One Way* ANOVA

ANOVA

kadar_air

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.083	2	.041	.366	.708
Within Goups	.679	6	.113		
Total	.762	8			

kadar_air

Student-Newman-Keuls[a]

asam_waktu	N	Subset for alpha = 0.05
		1
3% 24 jam	3	4.0167
2% 24 jam	3	4.1733
1% 24 jam	3	4.2467
Sig.		.696

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kadar_air

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.118	2	.059	.092	.914
Within Goups	3.866	6	.644		
Total	3.985	8			

kadar_air

Student-Newman-Keuls[a]

asam_waktu	N	Subset for alpha = 0.05
		1
3% 48 jam	3	4.7367

2% 48 jam	3	4.7667
1% 48 jam	3	4.9933
Sig.		.920

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kadar_air

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	3.964	2	1.982	10.045	.012
Within Goups	1.184	6	.197		
Total	5.148	8			

kadar_air

Student-Newman-Keuls[a]

		Subset for alpha = 0.05	
asam_waktu	N	1	2
3% 72 jam	3	3.4033	
2% 72 jam	3		4.7567
1% 72 jam	3		4.8600
Sig.		1.000	.785

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kadar_air

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.083	2	.041	.366	.708
Within Goups	.679	6	.113		
Total	.762	8			

kadar_air

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
1% 72 jam	3	4.0167
1% 48 jam	3	4.1733
1% 24 jam	3	4.2467
Sig.		.448

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kadar_air

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	.118	2	.059	.092	.914
Within Goups	3.866	6	.644		
Total	3.985	8			

kadar_air

Student-Newman-Keuls[a]

asam_waktu	N	Subset for alpha = 0.05
		1
2% 72 jam	3	4.7367
2% 48 jam	3	4.7667
2% 24 jam	3	4.9933
Sig.		.920

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kadar_air

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	3.964	2	1.982	10.045	.012
Within Goups	1.184	6	.197		
Total	5.148	8			

kadar_air

Student-Newman-Keuls[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
3% 72 jam	3	3.4033	
3% 48 jam	3		4.7567
3% 24 jam	3		4.8600
Sig.		1.000	.785

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

8.12. Kadar Protein Tepung Gelatin

8.12.1. Uji Homogenitas

Levene's Test of Equality of Error Variances[a]

Dependent Variable: kadar_protein

F	df1	df2	Sig.
2.111	8	18	.090

Tests the null hypothesis that the error variance of the dependent variable is equal across goups.

a. Design: Intercept + asam + waktu + asam * waktu

8.12.2. Uji Two Way ANOVA

Tests of Between-Subjects Effects

Dependent Variable: kadar_protein

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3141.028[a]	8	392.629	28.365	.000
Intercept	41957.071	1	41957.071	3031.149	.000
asam	304.836	2	152.418	11.011	.001
waktu	2791.657	2	1395.828	100.840	.000
asam * waktu	44.535	4	11.134	.804	.538
Error	249.155	18	13.842		
Total	45347.255	27			
Corrected Total	3390.184	26			

a. R Squared = .927 (Adjusted R Squared = .894)

kadar_protein

Duncan[a,b]

asam	N	Subset 1	Subset 2
1%	9	35.0417	
2%	9		40.0111
3%	9		43.2083
Sig.		1.000	.085

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 13.842.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

kadar_protein

Duncan[a,b]

waktu	N	Subset 1	Subset 2	Subset 3
24 jam	9	25.9000		
48 jam	9		41.9389	
72 jam	9			50.4222
Sig.		1.000	1.000	1.000

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 13.842.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

8.12.3. Uji One Way ANOVA

ANOVA

kadar_protein

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	105.058	2	52.529	8.861	.016
Within Goups	35.568	6	5.928		
Total	140.626	8			

kadar_protein

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05 1	Subset for alpha = 0.05 2
1% 24 jam	3	22.7583	
2% 24 jam	3	24.2917	
3% 24 jam	3		30.6500
Sig.		.470	1.000

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kadar_protein

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	69.954	2	34.977	1.482	.300
Within Goups	141.653	6	23.609		
Total	211.608	8			

kadar_protein

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
1% 48 jam	3	38.0583
2% 48 jam	3	43.2750
3% 48 jam	3	44.4833
Sig.		.169

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kadar_protein

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	174.359	2	87.180	7.272	.025
Within Goups	71.934	6	11.989		
Total	246.293	8			

kadar_protein

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 72 jam	3	44.3083	
2% 72 jam	3		52.4667
3% 72 jam	3		54.4917
Sig.		1.000	.501

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kadar_protein

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	737.555	2	368.777	13.226	.006
Within Goups	167.302	6	27.884		
Total	904.857	8			

kadar_protein

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 24 jam	3	22.7583	
1% 48 jam	3		38.0583
1% 72 jam	3		44.3083
Sig.		1.000	.197

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kadar_protein

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	1238.684	2	619.342	60.088	.000
Within Goups	61.843	6	10.307		
Total	1300.528	8			

kadar_protein

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05		
		1	2	3
2% 24 jam	3	24.2917		
2% 48 jam	3		43.2750	
2% 72 jam	3			52.4667
Sig.		1.000	1.000	1.000

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

kadar_protein

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	859.953	2	429.976	128.931	.000
Within Goups	20.010	6	3.335		
Total	879.962	8			

kadar_protein

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05		
		1	2	3
3% 24 jam	3	30.6500		
3% 48 jam	3		44.4833	
3% 72 jam	3			54.4917
Sig.		1.000	1.000	1.000

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

8.13. Rendemen Tepung Gelatin

8.13.1. Uji Homogenitas

Levene's Test of Equality of Error Variances[a]

Dependent Variable: rendemen

F	df1	df2	Sig.
1.821	8	18	.139

Tests the null hypothesis that the error variance of the dependent variable is equal across goups.

a. Design: Intercept + asam + waktu + asam * waktu

8.13.2. Uji *Two Way* ANOVA

Tests of Between-Subjects Effects

Dependent Variable: rendemen

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	24.102[a]	8	3.013	7.218	.000
Intercept	435.688	1	435.688	1043.786	.000
asam	12.033	2	6.016	14.414	.000
waktu	10.646	2	5.323	12.752	.000
asam * waktu	1.423	4	.356	.852	.511
Error	7.513	18	.417		
Total	467.303	27			
Corrected Total	31.616	26			

a. R Squared = .762 (Adjusted R Squared = .657)

rendemen

Duncan[a,b]

asam	N	Subset 1	Subset 2
1%	9	3.0744	
2%	9		4.4422
3%	9		4.5344
Sig.		1.000	.766

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .417.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

rendemen

Duncan[a,b]

waktu	N	Subset 1	Subset 2	Subset 3
24 jam	9	3.2389		
48 jam	9		4.0356	
72 jam	9			4.7767
Sig.		1.000	1.000	1.000

Means for goups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .417.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = ,05.

8.13.3. Uji One Way ANOVA

ANOVA

rendemen

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	5.862	2	2.931	10.761	.010
Within Goups	1.634	6	.272		
Total	7.496	8			

rendemen

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05 1	Subset for alpha = 0.05 2
1% 24 jam	3	2.1000	
2% 24 jam	3		3.7433

3% 24 jam	3		3.8733
Sig.		1.000	.771

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

rendemen

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	4.977	2	2.489	3.564	.095
Within Goups	4.189	6	.698		
Total	9.166	8			

rendemen

Duncan[a]

		Subset for alpha = 0.05	
asam_waktu	N	1	2
1% 48 jam	3	3.0200	
3% 48 jam	3	4.3067	4.3067
2% 48 jam	3		4.7800
Sig.		.108	.514

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

rendemen

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	2.617	2	1.308	4.645	.060
Within Goups	1.690	6	.282		
Total	4.307	8			

rendemen

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 72 jam	3	4.1033	
2% 72 jam	3	4.8033	4.8033
3% 72 jam	3		5.4233
Sig.		.157	.202

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

rendemen

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	6.033	2	3.017	13.497	.006
Within Goups	1.341	6	.224		
Total	7.374	8			

rendemen

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
1% 24 jam	3	2.1000	
1% 48 jam	3	3.0200	
1% 72 jam	3		4.1033
Sig.		.055	1.000

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

rendemen

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	2.199	2	1.099	1.600	.277
Within Goups	4.123	6	.687		
Total	6.322	8			

rendemen

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05
		1
2% 24 jam	3	3.7433
2% 48 jam	3	4.7800
2% 72 jam	3	4.8033
Sig.		.181

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

rendemen

	Sum of Squares	df	Mean Square	F	Sig.
Between Goups	3.837	2	1.919	5.617	.042
Within Goups	2.049	6	.342		
Total	5.887	8			

rendemen

Duncan[a]

asam_waktu	N	Subset for alpha = 0.05	
		1	2
3% 24 jam	3	3.8733	
3% 48 jam	3	4.3067	4.3067
3% 72 jam	3		5.4233
Sig.		.399	.058

Means for goups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

8.14. Uji Korelasi

Correlations

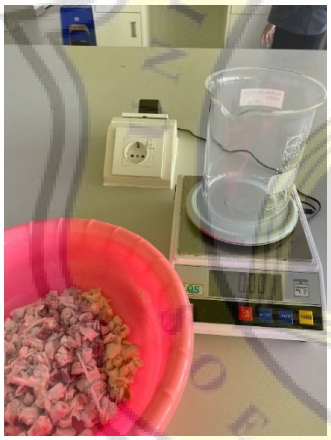
		berat_gel	ph_sebelum	ph_sesudah	kekuatan_gel	warna_l	warna_a	warna_b	berat_tepung	ph_tepung	kadar_air	kadar_protein	rendemen
berat_gel	Pearson Correlation	1	-.609**	.419*	.343	.097	.625**	.650**	.584**	.581**	-.266	.813**	.584**
	Sig. (2-tailed)		.001	.029	.080	.631	.000	.000	.001	.001	.181	.000	.001
	N	27	27	27	27	27	27	27	27	27	27	27	27
ph_sebelum	Pearson Correlation	-.609**	1	-.576**	-.606**	-.173	-.834**	-.715**	-.642**	-.789**	.256	-.749**	-.663**
	Sig. (2-tailed)	.001		.002	.001	.389	.000	.000	.000	.000	.197	.000	.000
	N	27	27	27	27	27	27	27	27	27	27	27	27
ph_sesudah	Pearson Correlation	.419*	-.576**	1	.452*	.059	.570**	.234	.412*	.488**	-.437*	.644**	.440*
	Sig. (2-tailed)	.029	.002		.018	.771	.002	.240	.033	.010	.023	.000	.022
	N	27	27	27	27	27	27	27	27	27	27	27	27
kekuatan_gel	Pearson Correlation	.343	-.606**	.452*	1	.494**	.547**	.483*	.608**	.701**	.010	.496**	.596**
	Sig. (2-tailed)	.080	.001	.018		.009	.003	.011	.001	.000	.960	.009	.001
	N	27	27	27	27	27	27	27	27	27	27	27	27
warna_l	Pearson Correlation	.097	-.173	.059	.494**	1	.125	.008	.237	.290	.247	-.014	.219
	Sig. (2-tailed)	.631	.389	.771	.009		.535	.967	.234	.142	.215	.947	.272
	N	27	27	27	27	27	27	27	27	27	27	27	27
warna_a	Pearson Correlation	.625**	-.834**	.570**	.547**	.125	1	.698**	.663**	.759**	-.267	.728**	.689**
	Sig. (2-tailed)	.000	.000	.002	.003	.535		.000	.000	.000	.177	.000	.000
	N	27	27	27	27	27	27	27	27	27	27	27	27
warna_b	Pearson Correlation	.650**	-.715**	.234	.483*	.008	.698**	1	.662**	.779**	-.192	.688**	.668**
	Sig. (2-tailed)	.000	.000	.240	.011	.967	.000		.000	.000	.339	.000	.000
	N	27	27	27	27	27	27	27	27	27	27	27	27
berat_tepung	Pearson Correlation	.584**	-.642**	.412*	.608**	.237	.663**	.662**	1	.747**	.095	.663**	.989**
	Sig. (2-tailed)	.001	.000	.033	.001	.234	.000	.000		.000	.638	.000	.000
	N	27	27	27	27	27	27	27	27	27	27	27	27
ph_tepung	Pearson Correlation	.581**	-.789**	.488**	.701**	.290	.759**	.779**	.747**	1	-.152	.703**	.745**
	Sig. (2-tailed)	.001	.000	.010	.000	.142	.000	.000	.000		.450	.000	.000
	N	27	27	27	27	27	27	27	27	27	27	27	27
kadar_air	Pearson Correlation	-.266	.256	-.437*	.010	.247	-.267	-.192	.095	-.152	1	-.284	.093
	Sig. (2-tailed)	.181	.197	.023	.960	.215	.177	.339	.638	.450		.152	.645
	N	27	27	27	27	27	27	27	27	27	27	27	27
kadar_protein	Pearson Correlation	.813**	-.749**	.644**	.496**	-.014	.728**	.688**	.663**	.703**	-.284	1	.680**
	Sig. (2-tailed)	.000	.000	.000	.009	.947	.000	.000	.000	.000	.152		.000
	N	27	27	27	27	27	27	27	27	27	27	27	27
rendemen	Pearson Correlation	.584**	-.663**	.440*	.596**	.219	.689**	.668**	.989**	.745**	.093	.680**	1
	Sig. (2-tailed)	.001	.000	.022	.001	.272	.000	.000	.000	.000	.645	.000	
	N	27	27	27	27	27	27	27	27	27	27	27	27

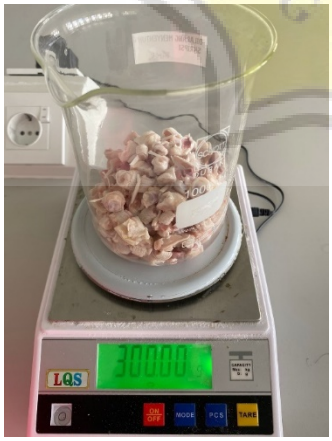
**. Correlation is significant at the 0.01 level (2-tailed).

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

8.15. Proses Pembuatan Gelatin

8.15.1. Tahap Persiapan

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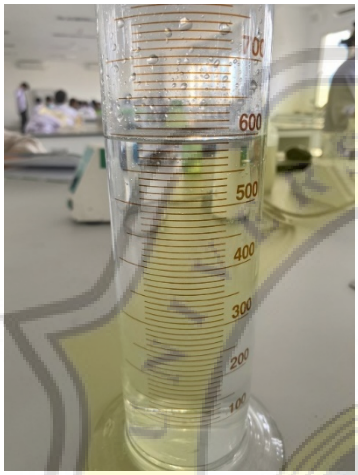
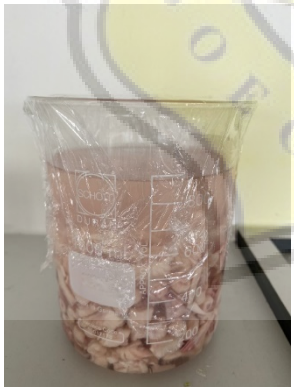
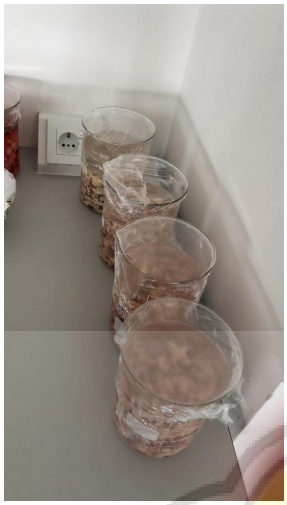
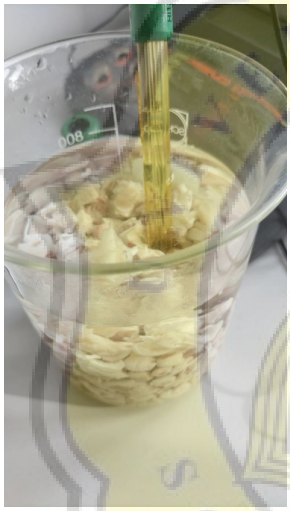


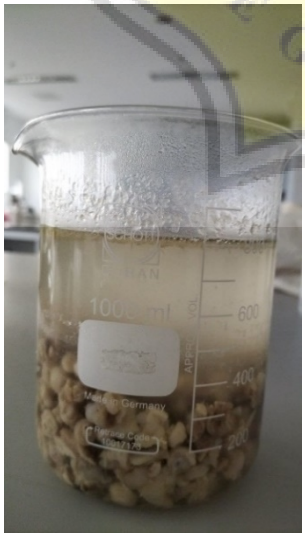
8.15.2. Tahap Hidrolisis dan Tahap Penetralan



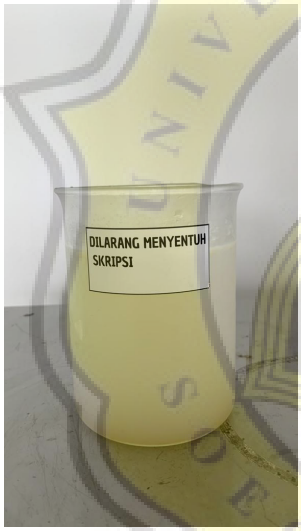




8.15.3. Hasil Ekstraksi

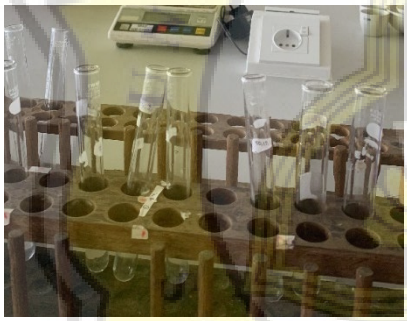


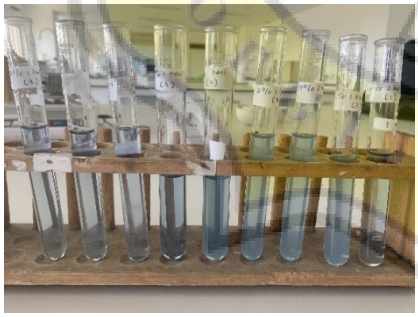
8.15.4. Gel Gelatin



8.15.5. Tahap Pengeringan

8.16. Analisis Kadar Protein Tepung Gelatin





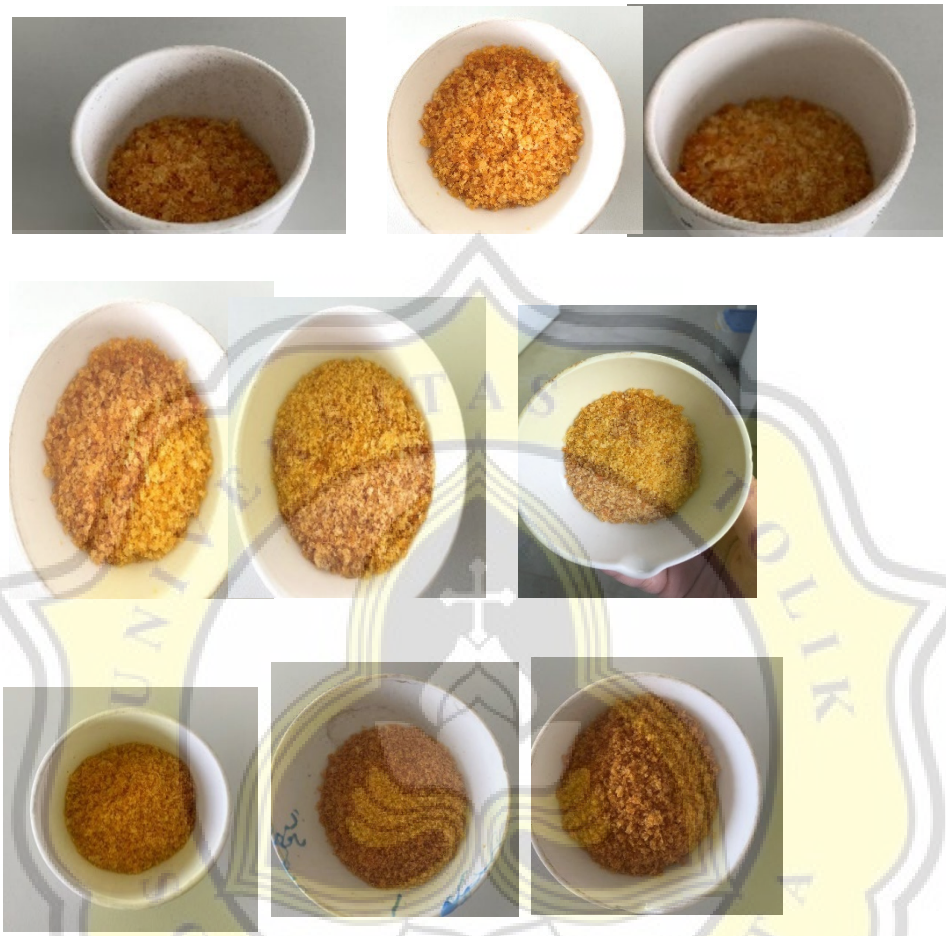
8.17. Alat yang Digunakan

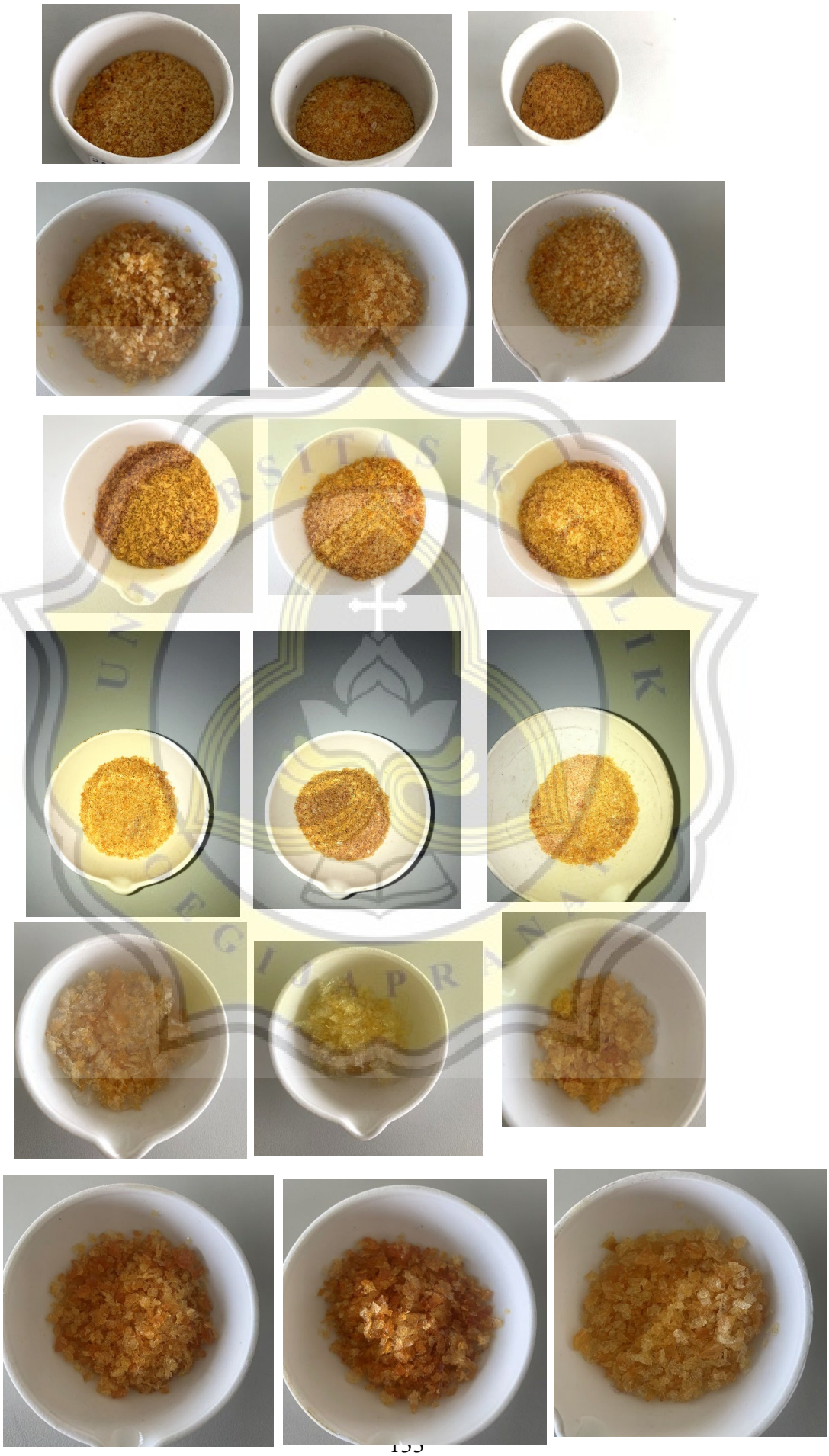
8.17.1. *Chromameter*

8.17.2. Spectrofotometer

8.17.3. *Magnetic Stirrer*

8.18. Tepung Gelatin





8.19. Hasil Plagscan

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