7. LAMPIRAN

Lampiran 1. Media yang digunakan untuk Pembuatan Inokulum

Media deMan Rogosa Sharpe Broth (MRS-B)"Merck"

Media ini dibuat dengan melarutkan 52,2 g bubuk media MRSB ke dalam 1 L aquades, dan kemudian diaduk dengan *stirrer* hingga benar-benar larut. Setelah itu dilakukan sterilisasi media tersebut menggunakan *autoclave* dengan suhu 121ºC selama 15 menit. Komposisi media ini antara lain: 10 g/L kasein atau daging pepton, 8 g/L ekstrak daging, 20 g/L D(+)-glukosa, 5 g/L *sodium acetate*, 4 g/L ekstrak ragi, 2 g/L *diammonium hydrogen citrate*, 2 g/L *dipotassium hydrogen phosphate*, 0,2 g/L magnesium sulfat, 0.04 g/L mangan sulfat, dan 1 g/L *Tween* 80.

Lampiran 2. Komposisi Larutan Standar McFarland 2 dan 3

Larutan standar McFarland 2 dan 3 digunakan untuk menentukan jumlah bakteri Lactobacillus pentosus LLA18 dan Lactobacillus fermentum LLB3 pada pembuatan inokulum bakteri asam laktat. Larutan Mc Farland 2 setara dengan jumlah bakteri 6 x 10^8 CFU / mL. Larutan ini dapat dibuat dengan mencampurkan 9,8 ml dari 1% H_2SO_4 dengan 0,2 ml dari 1% $BaCl_2$. Sedangkan larutan Mc Farland 3 setara dengan jumlah bakteri 9 x 10^8 CFU / mL.Larutan ini dapat dibuat dengan mencampurkan 9,7 ml dari 1% H_2SO_4 dengan 0,3 ml dari 1% $BaCl_2$.

Lampiran 3. Perhitungan Rendemen

Perhitungan rendemen tepung jagung fermentasi dihitung dengan rumus berikut :

$$\text{Rendemen (\%)} = \frac{berat\ tepung\ (g)}{berat\ biji\ jagung\ (g)} \text{ x } 100\%$$

(Indriyani *et al*., 2014)

- **Tepung jagung fermentasi 0 jam**

  Rendemen (%) = $\frac{800{,}67\ g}{1300\ g}$ x 100% = 61,59%

- **Tepung jagung fermentasi 24 jam dengan *Lactobacillus pentosus* LLA18**

  Rendemen (%) = $\frac{795{,}41\ g}{1300\ g}$ x 100% = 61,19%

- **Tepung jagung fermentasi 48 jam dengan *Lactobacillus pentosus* LLA18**

  Rendemen (%) = $\frac{795{,}69\ g}{1300\ g}$ x 100% = 61,21%

- **Tepung jagung fermentasi 72 jam dengan *Lactobacillus pentosus* LLA18**

  Rendemen (%) = $\frac{794{,}89\ g}{1300\ g}$ x 100% = 61,15%

- **Tepung jagung fermentasi 96 jam dengan *Lactobacillus pentosus* LLA18**

  Rendemen (%) = $\frac{795{,}08\ g}{1300\ g}$ x 100% = 61,16%

- **Tepung jagung fermentasi 120 jam dengan *Lactobacillus pentosus* LLA18**

  Rendemen (%) = $\frac{794{,}95\ g}{1300\ g}$ x 100% = 61,15%

- **Tepung jagung fermentasi 24 jam dengan *Lactobacillus fermentum* LLB3**

  Rendemen (%) = $\frac{795{,}23\ g}{1300\ g}$ x 100% = 61,17%

- **Tepung jagung fermentasi 48 jam dengan *Lactobacillus fermentum* LLB3**

  Rendemen (%) = $\frac{795{,}41\ g}{1300\ g}$ x 100% = 61,19%

- **Tepung jagung fermentasi 96 jam dengan *Lactobacillus fermentum* LLB3**

  Rendemen (%) = $\frac{795{,}62\ g}{1300\ g}$ x 100% = 61,20%

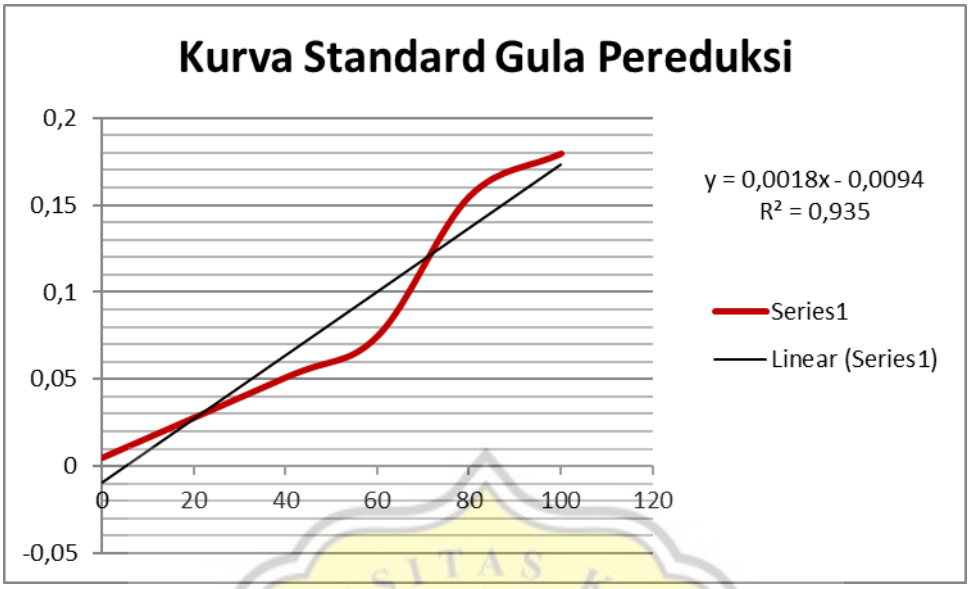
- **Tepung jagung fermentasi 72 jam dengan *Lactobacillus fermentum* LLB3**

  Rendemen (%) = $\frac{795{,}38\ g}{1300\ g}$ x 100% = 61,18%

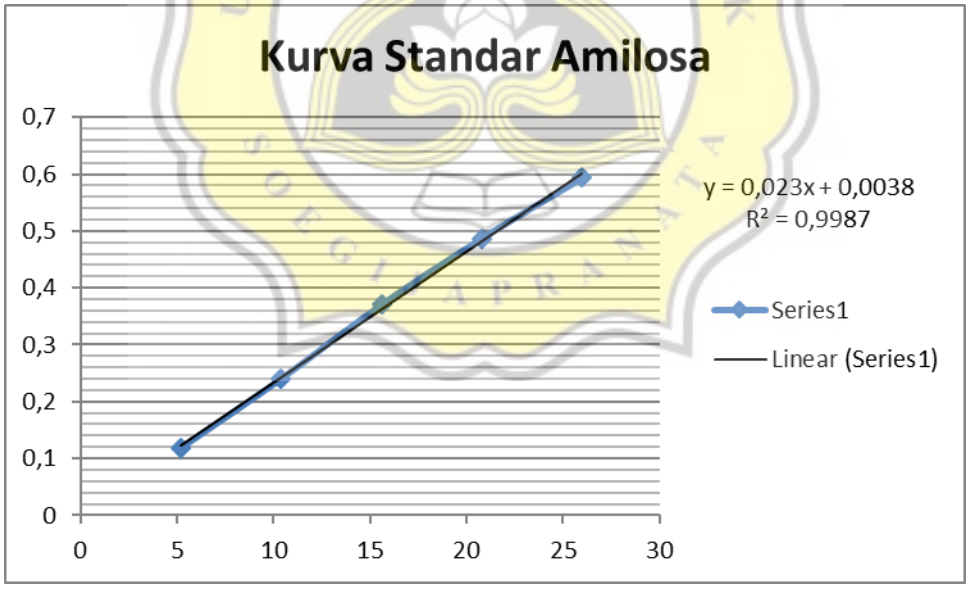
- **Tepung jagung fermentasi 120 jam dengan *Lactobacillus fermentum* LLB3**

  Rendemen (%) = $\frac{795{,}41\ g}{1300\ g}$ x 100% = 61,19%

Lampiran 4. Kurva Standar Gula Pereduksi dan Amilosa



Gambar 15. Kurva Standar Gula Pereduksi



Gambar 16. Kurva Standar Amilosa

Lampiran 5. Analisis Statistik Kadar Amilosa

Analisa Normalitas Data

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
KadarAmilosa	.052	60	.200*	.979	60	.398

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

a. Lilliefors Significance Correction

Analisa Homogenitas Data dengan Jenis Bakteri

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Kadar_Amilosa	Based on Mean	.363	1	58	.549
	Based on Median	.400	1	58	.530
	Based on Median and with adjusted df	.400	1	57.734	.530
	Based on trimmed mean	.395	1	58	.532

Analisa Homogenitas Data dengan Waktu Fermentasi

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Kadar_Amilosa	Based on Mean	3.814	4	55	.008
	Based on Median	2.542	4	55	.050
	Based on Median and with adjusted df	2.542	4	30.427	.060
	Based on trimmed mean	3.694	4	55	.010

Analisa Duncan

Kadar_Amilosa

Duncan[a]

		Subset for alpha = 0.05		
Bakteri_Hari	N	1	2	3
LLA18_96JAM	6	9.5850		
LLA18_72JAM	6	9.7225		
LLB3_72JAM	6	10.2337	10.2337	
LLA18_120JAM	6	10.3233	10.3233	
LLA18_24jam	6	11.3882	11.3882	11.3882
LLB3_96JAM	6	11.4200	11.4200	11.4200
LLA18_48JAM	6	11.7100	11.7100	11.7100
LLB3_120JAM	6		12.5273	12.5273
LLB3_48JAM	6		12.7472	12.7472
LLB3_24JAM	6			13.8237
Sig.		.102	.053	.057

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 6. Analisis Statistik Kadar Protein

Analisa Normalitas Data

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Kadar_Protein	.079	60	.200*	.967	60	.101

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

a. Lilliefors Significance Correction

Analisa Homogenitas Data dengan Jenis Bakteri

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Kadar_Protein	Based on Mean	1.121	1	58	.294
	Based on Median	.741	1	58	.393
	Based on Median and with adjusted df	.741	1	52.961	.393
	Based on trimmed mean	1.088	1	58	.301

Analisa Homogenitas Data dengan Waktu Fermentasi

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Kadar_Protein	Based on Mean	4.827	4	55	.002
	Based on Median	3.030	4	55	.025
	Based on Median and with adjusted df	3.030	4	42.623	.028
	Based on trimmed mean	4.810	4	55	.002

Analisa Duncan

Kadar_Protein

Duncan[a]

		Subset for alpha = 0.05			
Bakteri_Hari	N	1	2	3	4
LLA18_72JAM	6	8.4610			
LLA18_48JAM	6	9.2393	9.2393		
LLA18_96JAM	6	9.6548	9.6548		
LLA18_24jam	6	9.6643	9.6643		
LLA18_120JAM	6	9.7408	9.7408		
LLB3_24JAM	6		10.1315	10.1315	
LLB3_48JAM	6			11.2300	
LLB3_120JAM	6				12.5927
LLB3_96JAM	6				12.6677
LLB3_72JAM	6				12.6787
Sig.		.069	.206	.081	.897

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 7. Analisis Statistik *Swelling Volume*

Analisa Normalitas Data

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Swelling_Volume	.071	60	.200*	.990	60	.914

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

a. Lilliefors Significance Correction

Analisa Homogenitas Data dengan Jenis Bakteri

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Swelling_Volume	Based on Mean	.027	1	58	.869
	Based on Median	.035	1	58	.852
	Based on Median and with adjusted df	.035	1	57.239	.852
	Based on trimmed mean	.028	1	58	.868

Analisa Homogenitas Data dengan Waktu Fermentasi

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Swelling_Volume	Based on Mean	1.614	4	55	.184
	Based on Median	1.019	4	55	.406
	Based on Median and with adjusted df	1.019	4	39.306	.409
	Based on trimmed mean	1.445	4	55	.232

Analisa Duncan

Swelling_Volume

Duncan[a]

		Subset for alpha = 0.05		
Bakteri_Hari	N	1	2	3
LLB3_48JAM	6	7.2465		
LLB3_24JAM	6	7.5508	7.5508	
LLA18_120JAM	6	7.6370	7.6370	
LLB3_96JAM	6	7.8578	7.8578	
LLA18_72JAM	6	7.9283	7.9283	
LLB3_72JAM	6	7.9732	7.9732	
LLA18_96JAM	6		8.2332	8.2332
LLA18_48JAM	6		8.3180	8.3180
LLB3_120JAM	6		8.3257	8.3257
LLA18_24jam	6			8.9427
Sig.		.114	.099	.107

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 8. Analisis Statistik Kelarutan

Analisa Normalitas Data

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Uji_Kelarutan	.113	60	.056	.974	60	.216

a. Lilliefors Significance Correction

Analisa Homogenitas Data dengan Jenis Bakteri

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Kelarutan	Based on Mean	14.583	1	58	.000
	Based on Median	14.518	1	58	.000
	Based on Median and with adjusted df	14.518	1	57.556	.000
	Based on trimmed mean	14.553	1	58	.000

Analisa Homogenitas Data dengan Waktu Fermentasi

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Kelarutan	Based on Mean	1.535	4	55	.205
	Based on Median	.952	4	55	.441
	Based on Median and with adjusted df	.952	4	37.462	.445
	Based on trimmed mean	1.416	4	55	.241

Analisa Duncan

Kelarutan

Duncan[a]

		Subset for alpha = 0.05			
Bakteri_Hari	N	1	2	3	4
LLA18_48JAM	6	5.0262			
LLA18_24jam	6	5.4127	5.4127		
LLA18_72JAM	6	7.6782	7.6782	7.6782	
LLA18_120JAM	6	9.0053	9.0053	9.0053	9.0053
LLA18_96JAM	6	10.0337	10.0337	10.0337	10.0337
LLB3_120JAM	6		11.5082	11.5082	11.5082
LLB3_72JAM	6			11.9558	11.9558
LLB3_24JAM	6			13.2535	13.2535
LLB3_96JAM	6			13.8727	13.8727
LLB3_48JAM	6				15.1277
Sig.		.114	.054	.057	.060

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 9. Analisis Statistik Kapasitas Penyerapan Air

Analisa Normalitas Data

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
KapasitasPenyerapanAir	.134	60	.009	.969	60	.126

a. Lilliefors Significance Correction

Analisa Homogenitas Data dengan Jenis Bakteri

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
KPA	Based on Mean	.006	1	58	.940
	Based on Median	.208	1	58	.650
	Based on Median and with adjusted df	.208	1	49.264	.650
	Based on trimmed mean	.028	1	58	.868

Analisa Homogenitas Data dengan Waktu Fermentasi

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
KPA	Based on Mean	2.192	4	55	.082
	Based on Median	1.454	4	55	.229
	Based on Median and with adjusted df	1.454	4	48.723	.231
	Based on trimmed mean	2.181	4	55	.083

Analisa Duncan

KPA

Duncan[a]

		Subset for alpha = 0.05		
Bakteri_Hari	N	1	2	3
LLA18_72JAM	6	2.1177		
LLA18_96JAM	6	2.2547	2.2547	
LLA18_48JAM	6	2.2807	2.2807	
LLB3_96JAM	6	2.4047	2.4047	2.4047
LLB3_72JAM	6	2.5797	2.5797	2.5797
LLA18_24jam	6	2.6125	2.6125	2.6125
LLB3_24JAM	6		2.6800	2.6800
LLB3_48JAM	6		2.6942	2.6942
LLA18_120JAM	6		2.7280	2.7280
LLB3_120JAM	6			2.8292
Sig.		.052	.070	.101

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 10. Analisis Statistik Kadar Lemak

Analisa Normalitas Data

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
KadarLemak	.094	60	.200*	.971	60	.158

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

a. Lilliefors Significance Correction

Analisa Homogenitas Data dengan Jenis Bakteri

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Kadar_Lemak	Based on Mean	.606	1	58	.440
	Based on Median	.505	1	58	.480
	Based on Median and with adjusted df	.505	1	55.132	.480
	Based on trimmed mean	.555	1	58	.459

Analisa Homogenitas Data dengan Waktu Fermentasi

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Kadar_Lemak	Based on Mean	6.277	4	55	.000
	Based on Median	3.994	4	55	.006
	Based on Median and with adjusted df	3.994	4	24.896	.012
	Based on trimmed mean	5.838	4	55	.001

Analisa Duncan

Kadar_Lemak

Duncan[a]

		Subset for alpha = 0.05					
Bakteri_Hari	N	1	2	3	4	5	6
LLB3_72JAM	6	.2315					
LLB3_120JAM	6	.2882	.2882				
LLB3_96JAM	6	.4133	.4133	.4133			
LLA18_96JAM	6	.4163	.4163	.4163			
LLA18_72JAM	6		.5160	.5160	.5160		
LLB3_48JAM	6			.5972	.5972		
LLA18_48JAM	6				.7193	.7193	
LLB3_24JAM	6					.9245	.9245
LLA18_120JAM	6						.9968
LLA18_24jam	6						1.0523
Sig.		.165	.087	.167	.114	.092	.320

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 11. Analisis Statistik Kadar Air

Analisa Normalitas Data

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Kadar_Air	.119	60	.033	.969	60	.129

a. Lilliefors Significance Correction

Analisa Homogenitas Data dengan Jenis Bakteri

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Kadar_Air	Based on Mean	.037	1	58	.849
	Based on Median	.037	1	58	.849
	Based on Median and with adjusted df	.037	1	54.945	.849
	Based on trimmed mean	.037	1	58	.849

Analisa Homogenitas Data dengan Waktu Fermentasi

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Kadar_Air	Based on Mean	2.667	4	55	.042
	Based on Median	2.458	4	55	.056
	Based on Median and with adjusted df	2.458	4	32.577	.065
	Based on trimmed mean	2.642	4	55	.043

Analisa Duncan

Kadar_Air

Duncan[a]

		Subset for alpha = 0.05			
Bakteri_Hari	N	1	2	3	4
LLB3_96JAM	6	7.3433			
LLB3_24JAM	6	7.6067	7.6067		
LLA18_72JAM	6	7.6550	7.6550		
LLB3_48JAM	6		8.3100	8.3100	
LLA18_48JAM	6			8.6867	8.6867
LLB3_72JAM	6			8.7450	8.7450
LLA18_120JAM	6			8.8600	8.8600
LLA18_96JAM	6				9.1717
LLB3_120JAM	6				9.1967
LLA18_24jam	6				9.2733
Sig.		.400	.058	.152	.142

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 12. Analisis Statistik Kadar Gula Pereduksi

Analisa Normalitas Data

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
KadarGulaPereduksi	.121	60	.029	.967	60	.102

a. Lilliefors Significance Correction

Analisa Homogenitas Data dengan Jenis Bakteri

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Kadar_Gula_Pereduksi	Based on Mean	94.407	1	58	.000
	Based on Median	84.000	1	58	.000
	Based on Median and with adjusted df	84.000	1	40.044	.000
	Based on trimmed mean	94.282	1	58	.000

Analisa Homogenitas Data dengan Waktu Fermentasi

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Kadar_Gula_Pereduksi	Based on Mean	1.798	4	55	.142
	Based on Median	.400	4	55	.808
	Based on Median and with adjusted df	.400	4	39.030	.807
	Based on trimmed mean	1.517	4	55	.210

Analisa Duncan

Kadar_Gula_Pereduksi

Duncan[a]

		Subset for alpha = 0.05	
Bakteri_Hari	N	1	2
LLA18_72JAM	6	.1858	
LLA18_96JAM	6	.1924	
LLA18_120JAM	6	.2019	.2019
LLB3_96JAM	6	.2122	.2122
LLB3_120JAM	6	.2411	.2411
LLA18_48JAM	6	.2423	.2423
LLA18_24jam	6	.2536	.2536
LLB3_48JAM	6	.2541	.2541
LLB3_72JAM	6	.2611	.2611
LLB3_24JAM	6		.2798
Sig.		.089	.076

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 13. Analisis Statistik Kadar Abu

Analisa Normalitas Data

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
KadarAbu	.099	60	.200*	.964	60	.074

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

a. Lilliefors Significance Correction

Analisa Homogenitas Data dengan Jenis Bakteri

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Kadar_Abu	Based on Mean	1.488	1	58	.227
	Based on Median	1.451	1	58	.233
	Based on Median and with adjusted df	1.451	1	47.877	.234
	Based on trimmed mean	1.267	1	58	.265

Analisa Homogenitas Data dengan Waktu Fermentasi

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Kadar_Abu	Based on Mean	10.753	4	55	.000
	Based on Median	9.292	4	55	.000
	Based on Median and with adjusted df	9.292	4	37.629	.000
	Based on trimmed mean	10.673	4	55	.000

Analisa Duncan

Kadar_Abu

Duncan[a]

		Subset for alpha = 0.05
Bakteri_Hari	N	1
LLB3_120JAM	6	.2875
LLA18_96JAM	6	.3108
LLB3_96JAM	6	.3218
LLA18_48JAM	6	.3625
LLA18_120JAM	6	.4335
LLB3_72JAM	6	.4460
LLA18_72JAM	6	.4537
LLA18_24jam	6	.4578
LLB3_24JAM	6	.5070
LLB3_48JAM	6	.5082
Sig.		.119

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 14. Analisis Statistik Derajat Putih

Analisa Normalitas Data

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
DerajatPutih	.115	60	.047	.961	60	.053

a. Lilliefors Significance Correction

Analisa Homogenitas Data dengan Jenis Bakteri

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Derajat_Putih	Based on Mean	3.261	1	58	.076
	Based on Median	2.747	1	58	.103
	Based on Median and with adjusted df	2.747	1	57.943	.103
	Based on trimmed mean	3.183	1	58	.080

Analisa Homogenitas Data dengan Waktu Fermentasi

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Derajat_Putih	Based on Mean	3.725	4	55	.009
	Based on Median	2.509	4	55	.052
	Based on Median and with adjusted df	2.509	4	31.545	.062
	Based on trimmed mean	3.472	4	55	.013

Analisa Duncan

Derajat_Putih

Duncan[a]

		Subset for alpha = 0.05		
Bakteri_Hari	N	1	2	3
LLB3_120JAM	6	68.0605		
LLB3_96JAM	6	68.7027		
LLB3_24JAM	6	68.8489		
LLA18_72JAM	6	70.4895		
LLB3_48JAM	6	70.8624		
LLA18_24jam	6	71.7291	71.7291	
LLB3_72JAM	6	71.7842	71.7842	
LLA18_48JAM	6		75.1765	75.1765
LLA18_96JAM	6			76.6968
LLA18_120JAM	6			77.7778
Sig.		.065	.063	.159

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 15. Analisis Statistik pH

Analisa Normalitas Data

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pH	.128	60	.016	.973	60	.203

a. Lilliefors Significance Correction

Analisa Homogenitas Data dengan Jenis Bakteri

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
pH	Based on Mean	.838	1	58	.364
	Based on Median	.134	1	58	.716
	Based on Median and with adjusted df	.134	1	49.442	.716
	Based on trimmed mean	.740	1	58	.393

Analisa Homogenitas Data dengan Waktu Fermentasi

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
pH	Based on Mean	.838	1	58	.364
	Based on Median	.134	1	58	.716
	Based on Median and with adjusted df	.134	1	49.442	.716
	Based on trimmed mean	.740	1	58	.393

Analisa Duncan

pH

Duncan[a]

		Subset for alpha = 0.05					
Bakteri_Hari	N	1	2	3	4	5	6
LLA18_120JAM	6	3.8183					
LLA18_96JAM	6	3.8483	3.8483				
LLB3_120JAM	6		3.8833	3.8833			
LLA18_72JAM	6		3.8867	3.8867			
LLB3_96JAM	6			3.9150	3.9150		
LLB3_72JAM	6			3.9267	3.9267	3.9267	
LLA18_48JAM	6			3.9317	3.9317	3.9317	
LLA18_24jam	6				3.9517	3.9517	
LLB3_48JAM	6					3.9800	
LLB3_24JAM	6						4.0433
Sig.		.249	.166	.100	.201	.063	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 16. Analisis Statistik Densitas Kamba

Analisa Normalitas Data

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Densitas_Kamba	.128	60	.015	.962	60	.060

a. Lilliefors Significance Correction

Analisa Homogenitas Data dengan Jenis Bakteri

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Densitas_Kamba	Based on Mean	.281	1	58	.598
	Based on Median	.145	1	58	.705
	Based on Median and with adjusted df	.145	1	46.842	.705
	Based on trimmed mean	.293	1	58	.591

Analisa Homogenitas Data dengan Waktu Fermentasi

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Densitas_Kamba	Based on Mean	3.537	4	55	.012
	Based on Median	3.245	4	55	.018
	Based on Median and with adjusted df	3.245	4	52.299	.019
	Based on trimmed mean	3.564	4	55	.012

Analisis Duncan

Densitas_Kamba

Duncan[a]

		Subset for alpha = 0.05		
Bakteri_Hari	N	1	2	3
LLA18_120JAM	6	.7983		
LLB3_24JAM	6	.8000	.8000	
LLB3_96JAM	6	.8050	.8050	.8050
LLA18_96JAM	6	.8100	.8100	.8100
LLB3_120JAM	6	.8100	.8100	.8100
LLA18_48JAM	6	.8133	.8133	.8133
LLA18_72JAM	6	.8133	.8133	.8133
LLA18_24jam	6	.8167	.8167	.8167
LLB3_72JAM	6		.8200	.8200
LLB3_48JAM	6			.8250
Sig.		.084	.059	.059

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 17. Analisis Statistik Rendemen

Analisa Normalitas Data

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Rendemen	.095	60	.200*	.978	60	.348

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

a. Lilliefors Significance Correction

Analisa Homogenitas Data dengan Jenis Bakteri

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Rendemen	Based on Mean	11.543	1	58	.001
	Based on Median	9.026	1	58	.004
	Based on Median and with adjusted df	9.026	1	45.004	.004
	Based on trimmed mean	11.328	1	58	.001

Analisa Homogenitas Data dengan Waktu Fermentasi

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Rendemen	Based on Mean	5.754	4	55	.001
	Based on Median	5.303	4	55	.001
	Based on Median and with adjusted df	5.303	4	48.533	.001
	Based on trimmed mean	5.674	4	55	.001

Analisa Duncan

Rendemen

Duncan[a]

		Subset for alpha = 0.05	
Bakteri_Hari	N	1	2
LLB3_96JAM	6	61.1583	
LLB3_120JAM	6	61.1633	
LLB3_72JAM	6	61.1700	
LLA18_120JAM	6	61.1717	
LLA18_72JAM	6	61.1767	
LLB3_24JAM	6	61.1767	
LLA18_24jam	6	61.1800	61.1800
LLA18_96JAM	6	61.1850	61.1850
LLB3_48JAM	6	61.1867	61.1867
LLA18_48JAM	6		61.2050
Sig.		.057	.071

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 18. Analisis Statistik Korelasi Antar Parameter Tepung Jagung Fermentasi

Correlations

		Kadar_Amilosa	Kadar_Gula_Pereduksi	Kadar_Air	Kadar_Lemak	Kadar_Protein	Kadar_Abu	Derajat_Putih	pH	Densitas_Kamba	Kelarutan	Swelling_Volume	KPA	Rendemen
Kadar_Amilosa	Pearson Correlation	1	.565**	-.018	.085	.267*	.037	-.428**	.573**	-.265*	-.083	-.422**	.059	.251
	Sig. (2-tailed)		.000	.889	.520	.039	.781	.001	.000	.040	.528	.001	.655	.053
	N	60	60	60	60	60	60	60	60	60	60	60	60	60
Kadar_Gula_Pereduksi	Pearson Correlation	.565**	1	.387**	.154	.495**	-.378**	-.100	.443**	-.116	-.178	-.243	-.192	.408**
	Sig. (2-tailed)	.000		.002	.240	.000	.003	.447	.000	.377	.174	.062	.142	.001
	N	60	60	60	60	60	60	60	60	60	60	60	60	60
Kadar_Air	Pearson Correlation	-.018	.387**	1	.090	.147	-.316*	.340**	-.305*	-.136	-.414**	.135	-.112	.199
	Sig. (2-tailed)	.889	.002		.494	.263	.014	.008	.018	.301	.001	.304	.392	.128
	N	60	60	60	60	60	60	60	60	60	60	60	60	60
Kadar_Lemak	Pearson Correlation	.085	.154	.090	1	-.304*	.007	.095	.250	-.263*	-.440**	.032	.149	.054
	Sig. (2-tailed)	.520	.240	.494		.018	.961	.470	.054	.043	.000	.806	.255	.681
	N	60	60	60	60	60	60	60	60	60	60	60	60	60
Kadar_Protein	Pearson Correlation	.267*	.495**	.147	-.304*	1	-.319*	-.346**	.134	-.019	.230	-.171	.119	-.199
	Sig. (2-tailed)	.039	.000	.263	.018		.013	.007	.308	.888	.077	.193	.366	.127
	N	60	60	60	60	60	60	60	60	60	60	60	60	60
Kadar_Abu	Pearson Correlation	.037	-.378**	-.316*	.007	-.319*	1	-.279*	.236	-.048	.010	-.127	.335**	-.176
	Sig. (2-tailed)	.781	.003	.014	.961	.013		.031	.069	.717	.942	.334	.009	.177
	N	60	60	60	60	60	60	60	60	60	60	60	60	60
Derajat_Putih	Pearson Correlation	-.428**	-.100	.340**	.095	-.346**	-.279*	1	-.459**	.191	-.061	.276*	-.163	.150
	Sig. (2-tailed)	.001	.447	.008	.470	.007	.031		.000	.144	.642	.033	.214	.252
	N	60	60	60	60	60	60	60	60	60	60	60	60	60
pH	Pearson Correlation	.573**	.443**	-.305*	.250	.134	.236	-.459**	1	-.010	-.086	-.152	.194	.094
	Sig. (2-tailed)	.000	.000	.018	.054	.308	.069	.000		.942	.512	.247	.137	.477
	N	60	60	60	60	60	60	60	60	60	60	60	60	60
Densitas_Kamba	Pearson Correlation	-.265*	-.116	-.136	-.263*	-.019	-.048	.191	-.010	1	.432**	.347**	.005	.057
	Sig. (2-tailed)	.040	.377	.301	.043	.888	.717	.144	.942		.001	.007	.971	.667
	N	60	60	60	60	60	60	60	60	60	60	60	60	60
Kelarutan	Pearson Correlation	-.083	-.178	-.414**	-.440**	.230	.010	-.061	-.086	.432**	1	-.199	-.007	-.179
	Sig. (2-tailed)	.528	.174	.001	.000	.077	.942	.642	.512	.001		.128	.959	.172
	N	60	60	60	60	60	60	60	60	60	60	60	60	60
Swelling_Volume	Pearson Correlation	-.422**	-.243	.135	.032	-.171	-.127	.276*	-.152	.347**	-.199	1	.198	-.063
	Sig. (2-tailed)	.001	.062	.304	.806	.193	.334	.033	.247	.007	.128		.129	.632
	N	60	60	60	60	60	60	60	60	60	60	60	60	60
KPA	Pearson Correlation	.059	-.192	-.112	.149	.119	.335**	-.163	.194	.005	-.007	.198	1	-.425**
	Sig. (2-tailed)	.655	.142	.392	.255	.366	.009	.214	.137	.971	.959	.129		.001
	N	60	60	60	60	60	60	60	60	60	60	60	60	60
Rendemen	Pearson Correlation	.251	.408**	.199	.054	-.199	-.176	.150	.094	.057	-.179	-.063	-.425**	1
	Sig. (2-tailed)	.053	.001	.128	.681	.127	.177	.252	.477	.667	.172	.632	.001	
	N	60	60	60	60	60	60	60	60	60	60	60	60	60

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

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

Lampiran 19. Analisa Statistik Independent T-test

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Kadar_Amilosa	Equal variances assumed	.363	.549	-2.988	58	.004	-1.60457	.53703	-2.67955	-.52958
	Equal variances not assumed			-2.988	57.553	.004	-1.60457	.53703	-2.67973	-.52941
Kadar_Gula_Pereduksi	Equal variances assumed	94.407	.000	-2.062	58	.044	-.03447	.01671	-.06793	-.00101
	Equal variances not assumed			-2.062	32.932	.047	-.03447	.01671	-.06848	-.00046
Kadar_Air	Equal variances assumed	.037	.849	2.224	58	.030	.48900	.21989	.04885	.92915
	Equal variances not assumed			2.224	57.630	.030	.48900	.21989	.04879	.92921
Kadar_Lemak	Equal variances assumed	.606	.440	3.017	58	.004	.24923	.08261	.08388	.41459
	Equal variances not assumed			3.017	56.530	.004	.24923	.08261	.08379	.41468
Kadar_Protein	Equal variances assumed	1.121	.294	-7.572	58	.000	-2.50803	.33124	-3.17109	-1.84498
	Equal variances not assumed			-7.572	55.741	.000	-2.50803	.33124	-3.17166	-1.84440
Kadar_Abu	Equal variances assumed	1.488	.227	-.198	58	.844	-.01043	.05276	-.11604	.09517
	Equal variances not assumed			-.198	52.095	.844	-.01043	.05276	-.11630	.09543
Derajat_Putih	Equal variances assumed	3.261	.076	5.114	58	.000	4.72222	.92339	2.87386	6.57057
	Equal variances not assumed			5.114	54.956	.000	4.72222	.92339	2.87168	6.57275
pH	Equal variances assumed	.838	.364	-3.547	58	.001	-.06233	.01757	-.09751	-.02716
	Equal variances not assumed			-3.547	55.913	.001	-.06233	.01757	-.09754	-.02713
Densitas_Kamba	Equal variances assumed	.281	.598	-.391	58	.697	-.00167	.00426	-.01019	.00686
	Equal variances not assumed			-.391	55.155	.697	-.00167	.00426	-.01020	.00687
Kelarutan	Equal variances assumed	14.583	.000	-4.633	58	.000	-5.71237	1.23303	-8.18055	-3.24419
	Equal variances not assumed			-4.633	49.207	.000	-5.71237	1.23303	-8.18997	-3.23476
Swelling_Volume	Equal variances assumed	.027	.869	2.152	58	.036	.42103	.19565	.02939	.81267
	Equal variances not assumed			2.152	57.526	.036	.42103	.19565	.02932	.81274
KPA	Equal variances assumed	.006	.940	-2.288	58	.026	-.23883	.10438	-.44778	-.02989
	Equal variances not assumed			-2.288	57.261	.026	-.23883	.10438	-.44783	-.02983
Rendemen	Equal variances assumed	11.543	.001	2.151	58	.036	.01267	.00589	.00088	.02445
	Equal variances not assumed			2.151	45.233	.037	.01267	.00589	.00081	.02453

Lampiran 20. Analisis Statistik One Way ANOVA

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Kadar_Amilosa	Between Groups	105.944	9	11.772	3.206	.004
	Within Groups	183.585	50	3.672		
	Total	289.529	59			
Kadar_Gula_Pereduksi	Between Groups	.056	9	.006	1.505	.172
	Within Groups	.205	50	.004		
	Total	.261	59			
Kadar_Air	Between Groups	27.856	9	3.095	8.697	.000
	Within Groups	17.794	50	.356		
	Total	45.651	59			
Kadar_Lemak	Between Groups	4.727	9	.525	12.265	.000
	Within Groups	2.141	50	.043		
	Total	6.869	59			
Kadar_Protein	Between Groups	132.699	9	14.744	12.908	.000
	Within Groups	57.113	50	1.142		
	Total	189.812	59			
Kadar_Abu	Between Groups	.360	9	.040	.968	.477
	Within Groups	2.064	50	.041		
	Total	2.423	59			
Derajat_Putih	Between Groups	633.291	9	70.366	7.942	.000
	Within Groups	442.996	50	8.860		
	Total	1076.287	59			
pH	Between Groups	.228	9	.025	12.716	.000
	Within Groups	.099	50	.002		
	Total	.327	59			
Densitas_Kamba	Between Groups	.004	9	.000	1.778	.096
	Within Groups	.012	50	.000		
	Total	.016	59			
Kelarutan	Between Groups	655.883	9	72.876	3.151	.004
	Within Groups	1156.303	50	23.126		
	Total	1812.185	59			
Swelling_Volume	Between Groups	12.465	9	1.385	2.947	.007
	Within Groups	23.497	50	.470		
	Total	35.962	59			
KPA	Between Groups	3.058	9	.340	2.335	.028
	Within Groups	7.276	50	.146		
	Total	10.335	59			
Rendemen	Between Groups	.009	9	.001	2.245	.034
	Within Groups	.023	50	.000		
	Total	.033	59			

DINDA AYU TESALONIKA

PLAGIARISM CHECK.ORG

6.99% PLAGIARISM APPROXIMATELY

Report #10513310

PENDAHULUAN1.1.Latar BelakangTepung merupakan bahan baku dalam pembuatan berbagai jenis makanan terutama untuk produk bakery. Tepung yang umum digunakan yaitu tepung terigu, beras, ketan, jagung, dan masih banyak jenis tepung yang lainnya. Proses pembuatannya pun terbilang sangat mudah karena hanya dengan menghancurkan bulir biji tanaman menjadi butiran halus. Tepung terigu menjadi pilihan utama dalam setiap pegolahan makanan karena dapat membentuk gluten yang dibutuhkan dalam pembuatan cake, mie, dan roti. Sifat tersebut tidak dimiliki oleh tepung serealia lainnya (Christine et al., 2015). Namun tidak semua sasaran konsumen dapat menikmati produk pangan yang diolah dengan tepung terigu. Konsumen penderita celiac adalah salah satunya (Oktadiana et al., 2017). Selain itu, gandum sebagai bahan baku tepung terigu biasanya didapatkan dengan diimpor dari berbagai negara seperti Amerika, Kanada, Australia, Ukraina, India, dan Cina (Christine et al., 2015). Jagung dapat menjadi salah satu solusi dalam mengganti peran gandum untuk pembuatan tepung. Hal itu bisa menjadi pilihan karena di Indonesia terdapat 22 daerah sentra jagung yang tersebar di Tanah Air seperti Jawa Tengah, Jawa Timur, Nusa Tenggara Barat, Lampung, Sulawesi Selatan, dan Gorontalo (Anonim, 2019). Jagung adalah salah satu contoh bahan pangan sumber karbohidrat kedua setelah