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LAMPIRAN

Lampiran 1. Tabel hasil pengamatan gula reduksi selama proses likuifikasi tepung empulur sagu menggunakan beberapa jenis enzim

Enzim	Waktu	Ulangan		Rerata	SD
		1	2		
a-amilase	0	0.2216	0.1524	0.1870	0.0490
	12	0.5605	0.3843	0.4724	0.1246
	24	0.5141	0.5063	0.5102	0.0055
	36	0.6928	0.6821	0.6875	0.0075
	48	0.8041	0.7994	0.8017	0.0033
	60	0.9060	0.8856	0.8958	0.0144
	72	0.9812	1.0313	1.0063	0.0355
	84	1.1442	1.1050	1.1246	0.0277
	96	1.2226	1.1066	1.1646	0.0820
	108	1.0376	1.1614	1.0995	0.0876
	120	1.0486	1.1787	1.1136	0.0920
	132	1.0611	1.1787	1.1199	0.0831
	144	1.0016	1.2147	1.1082	0.1507
	156	1.0799	1.2022	1.1411	0.0864
	168	1.1003	1.2649	1.1826	0.1164
xylanase	0	0.1818	0.1721	0.1770	0.0069
	12	0.5494	0.5266	0.5380	0.0161
	24	0.6685	0.6638	0.6661	0.0033
	36	0.8777	0.8238	0.8508	0.0381
	48	0.9906	0.9279	0.9592	0.0443
	60	1.0878	1.0172	1.0525	0.0499
	72	1.1285	1.1834	1.1560	0.0388
	84	1.3699	1.2665	1.3182	0.0731
	96	1.4953	1.2774	1.3864	0.1541
	108	1.3379	1.3293	1.3336	0.0061
	120	1.3914	1.4224	1.4069	0.0219
	132	1.4586	1.4724	1.4655	0.0098
	144	1.5431	1.5328	1.5379	0.0073
	156	1.6276	1.6138	1.6207	0.0098
	168	1.6379	1.6034	1.6207	0.0244
mannanase	0	0.1809	0.1956	0.1882	0.0104
	12	0.4784	0.3661	0.4223	0.0794
	24	0.5749	0.4718	0.5234	0.0729
	36	0.3978	0.5227	0.4603	0.0883
	48	0.4083	0.5682	0.4882	0.1130
	60	0.4255	0.6105	0.5180	0.1308
	72	0.5415	0.6677	0.6046	0.0892
	84	0.5619	0.7014	0.6317	0.0986
	96	0.5549	0.6614	0.6082	0.0754

	108	0.4843	0.6928	0.5886	0.1474
	120	0.4843	0.7179	0.6011	0.1651
	132	0.5063	0.7171	0.6117	0.1491
	144	0.5376	0.7139	0.6258	0.1247
	156	0.5588	0.7335	0.6462	0.1236
	168	0.5854	0.7382	0.6618	0.1081
cellulase	0	0.1840	0.1762	0.1801	0.0055
	12	0.4276	0.2097	0.3187	0.1541
	24	0.4608	0.2947	0.3777	0.1175
	36	0.4044	0.3770	0.3907	0.0194
	48	0.3871	0.4232	0.4052	0.0255
	60	0.3871	0.4812	0.4342	0.0665
	72	0.4969	0.5384	0.5176	0.0294
	84	0.5086	0.5556	0.5321	0.0332
	96	0.5055	0.5415	0.5235	0.0255
	108	0.4404	0.5666	0.5035	0.0892
	120	0.4592	0.5697	0.5145	0.0781
	132	0.4734	0.5940	0.5337	0.0853
	144	0.4843	0.5807	0.5325	0.0682
	156	0.5259	0.5956	0.5607	0.0493
	168	0.5408	0.6129	0.5768	0.0510

Lampiran 2. Tabel rata-rata hasil pengamatan gula reduksi selama proses likuifikasi tepung empulur sagu menggunakan beberapa jenis enzim

Waktu	Enzim				Rerata	SD
	α -amylase	xylanase	mannanase	cellulase		
0	0.1870	0.1770	0.1882	0.1801	0.1831	0.0054
12	0.4724	0.5380	0.4223	0.3187	0.4378	0.0925
24	0.5102	0.6661	0.5234	0.3777	0.5194	0.1179
36	0.6875	0.8508	0.4603	0.3907	0.5973	0.2112
48	0.8017	0.9592	0.4882	0.4052	0.6636	0.2608
60	0.8958	1.0525	0.5180	0.4342	0.7251	0.2966
72	1.0063	1.1560	0.6046	0.5176	0.8211	0.3084
84	1.1246	1.3182	0.6317	0.5321	0.9016	0.3798
96	1.1646	1.3864	0.6082	0.5235	0.9207	0.4210
108	1.0995	1.3336	0.5886	0.5035	0.8813	0.4003
120	1.1136	1.4069	0.6011	0.5145	0.9090	0.4243
132	1.1199	1.4655	0.6117	0.5337	0.9327	0.4402
144	1.1082	1.5379	0.6258	0.5325	0.9511	0.4655
156	1.1411	1.6207	0.6462	0.5607	0.9922	0.4909
168	1.1826	1.6207	0.6618	0.5768	1.0105	0.4870
Rerata	0.9077	1.1393	0.5453	0.4601		
SD	0.3098	0.4281	0.1221	0.1087		

Lampiran 3. ANOVA hasil pengamatan gula reduksi selama proses likuifikasi tepung empulur sagu

Tests of Between-Subjects Effects

Dependent Variable: Gula Reduksi

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	17.619 ^a	59	.299	45.352	.000
Intercept	69.878	1	69.878	10612.405	.000
enzim	9.050	3	3.017	458.122	.000
waktu	6.407	14	.458	69.505	.000
enzim * waktu	2.162	42	.051	7.817	.000
Error	.395	60	.007		
Total	87.892	120			
Corrected Total	18.014	119			

a. R Squared = .978 (Adjusted R Squared = .957)

Lampiran 4. Uji lanjut pengaruh tunggal enzim terhadap gula reduksi pada proses likuifikasi dengan beberapa jenis enzim

Gula Reduksi

Duncan^{a,b}

Jenis Enzim	N	Subset			
		1	2	3	4
cellulase	30	.4601			
mannanase	30		.5453		
a-amylase	30			.9077	
xylanase	30				1.1393
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .007.

a. Uses Harmonic Mean Sample Size = 30.000.

b. Alpha = 0.05.

Lampiran 5. Uji lanjut pengaruh tunggal waktu terhadap gula reduksi pada proses likuifikasi

Gula Reduksi

Duncan^{a,b}

WaktuN		Subset								
		1	2	3	4	5	6	7	8	9
0	8	.1831								
12	8		.4378							
24	8			.5194						
36	8			.5973	.5973					
48	8				.6636	.6636				
60	8					.7251				
72	8						.8211			
108	8						.8813	.8813		
84	8						.9016	.9016	.9016	
120	8						.9090	.9090	.9090	
96	8							.9207	.9207	.9207
132	8							.9327	.9327	.9327
144	8							.9511	.9511	.9511
156	8								.9922	.9922
168	8									1.0105
Sig.		1.000	1.000	.059	.107	.135	.051	.138	.053	.051

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .007.

a. Uses Harmonic Mean Sample Size = 8.000.

b. Alpha = 0.05.

mannanase 156	2							.646 2	.646 2	.646 2	.646 2														
mannanase 168	2								.661 8	.661 8	.661 8														
xylanase 24	2								.666 1	.666 1	.666 1														
a-amylase 36	2									.687 5	.687 5	.687 5													
a-amylase 48	2										.801 7	.801 7	.801 7												
xylanase 36	2											.850 8	.850 8	.8508											
a-amylase 60	2												.895 8	.8958	.8958										
xylanase 48	2												.959 2	.9592	.9592	.9592									
a-amylase 72	2													1.006 3	1.006 3	1.006 3	1.006 3								
xylanase 60	2														1.052 5	1.052 5	1.052 5								
a-amylase 108	2															1.099 5	1.099 5								
a-amylase 144	2																1.108 2	1.108 2							
a-amylase 120	2																	1.113 6	1.113 6						
a-amylase 132	2																		1.119 9	1.119 9					
a-amylase 84	2																			1.124 6	1.124 6				
a-amylase 156	2																				1.141 1	1.141 1	1.141 1		
xylanase 72	2																					1.156 0	1.156 0	1.156 0	
a-amylase 96	2																						1.164 6	1.164 6	1.164 6

a-amylase 168	2																	1.182 6	1.182 6	1.182 6				
xylanase 84	2																			1.318 2	1.318 2	1.318 2		
xylanase 108	2																				1.333 6	1.333 6		
xylanase 96	2																					1.386 4	1.386 4	
xylanase 120	2																					1.406 9	1.406 9	
xylanase 132	2																					1.465 5	1.465 5	1.465 5
xylanase 144	2																						1.537 9	1.537 9
xylanase 156	2																							1.620 7
xylanase 168	2																							1.620 7
Sig.		.125	.051	.050	.052	.050	.063	.053	.069	.058	.052	.064	.061	.080	.084	.082	.061	.073	.054	.054	.111	.093	.085	

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .007.

a. Uses Harmonic Mean Sample Size = 2.000.

b. Alpha = 0.05.

Lampiran 7. Tabel hasil pengamatan gula reduksi selama proses sakarifikasi tepung empulur sagu menggunakan beberapa jenis enzim

Enzim	Waktu	Ulangan		Rerata	SD
		1	2		
α-amylase	180	3.3292	3.2249	3.2770	0.0737
	192	3.4514	3.5423	3.4969	0.0643
	204	3.8049	3.6403	3.7226	0.1164
	216	3.8832	3.9929	3.9381	0.0776
	228	3.8989	3.7618	3.8303	0.0970
	240	4.1418	3.5541	3.8480	0.4156
xylanase	180	3.6599	3.2406	3.4502	0.2965
	192	3.8284	3.5815	3.7049	0.1746
	204	3.7970	3.6442	3.7206	0.1081
	216	3.9067	3.7226	3.8147	0.1302
	228	3.9577	3.8245	3.8911	0.0942
	240	4.1654	3.9067	4.0361	0.1829
mannanase	180	3.2853	3.1505	3.2179	0.0953
	192	3.3260	3.4208	3.3734	0.0671
	204	3.4138	3.4875	3.4506	0.0521
	216	3.3542	3.5776	3.4659	0.1579
	228	3.7226	3.5972	3.6599	0.0887
	240	3.9459	3.7108	3.8284	0.1662
cellulase	180	3.1975	3.3111	3.2543	0.0804
	192	3.3542	3.7108	3.5325	0.2521
	204	3.3605	3.7735	3.5670	0.2920
	216	3.4075	3.7382	3.5729	0.2339
	228	3.4577	3.9067	3.6822	0.3175
	240	3.8401	3.8519	3.8460	0.0083

Lampiran 8. Tabel rata-rata hasil pengamatan gula reduksi selama proses sakarifikasi tepung empulur sagu menggunakan beberapa jenis enzim

Waktu	Enzim				Rerata	SD
	α-amylase	xylanase	mannanase	cellulase		
168	1.1826	1.6206	0.6618	0.5768	1.0105	0.4870
180	3.2770	3.4502	3.2178	3.2543	3.2999	0.1032
192	3.4968	3.7049	3.3734	3.5325	3.5269	0.1368
204	3.7225	3.7206	3.4506	3.5670	3.6152	0.1317
216	3.9380	3.8146	3.4659	3.5728	3.6979	0.2166
228	3.8303	3.8910	3.6598	3.6822	3.7659	0.1126
240	3.8479	4.0360	3.828	3.8460	3.8896	0.0980
Rerata	3.3279	3.4626	3.0940	3.1474		
SD	0.9733	0.8321	1.0904	1.1474		

Lampiran 9. ANOVA hasil pengamatan gula reduksi selama proses sakarifikasi tepung empulur sagu
Tests of Between-Subjects Effects

Dependent Variable: Gula Reduksi

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	50.946 ^a	27	1.887	64.694	.000
Intercept	594.407	1	594.407	20380.105	.000
enzim2	1.202	3	.401	13.742	.000
waktu2	48.827	6	8.138	279.016	.000
enzim2 * waktu2	.916	18	.051	1.746	.090
Error	.817	28	.029		
Total	646.170	56			
Corrected Total	51.762	55			

a. R Squared = .984 (Adjusted R Squared = .969)

Lampiran 10. Uji lanjut pengaruh tunggal jenis enzim terhadap gula reduksi pada proses sakarifikasi

Gula Reduksi

Duncan^{a,b}

Jenis Enzim	N	Subset		
		1	2	3
mannanase+AMG	14	3.0940		
cellulase+AMG	14	3.1474		
a-amylase+AMG	14		3.3279	
xylanase+AMG	14			3.4626
Sig.		.415	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .029.

a. Uses Harmonic Mean Sample Size = 14.000.

b. Alpha = 0.05.

Lampiran 11. Uji lanjut pengaruh tunggal waktu terhadap gula reduksi pada proses sakarifikasi

Gula Reduksi

Duncan^{a,b}

Waktu Sakarifikasi	N	Subset				
		1	2	3	4	5
168	8	1.0105				
180	8		3.2999			
192	8			3.5269		
204	8			3.6152	3.6152	
216	8			3.6979	3.6979	
228	8				3.7659	3.7659
240	8					3.8896
Sig.		1.000	1.000	.067	.106	.158

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .029.

a. Uses Harmonic Mean Sample Size = 8.000.

b. Alpha = 0.05.

Lampiran 12. Tabel hasil pengamatan pH selama proses likuififikasi tepung empulur sagu menggunakan beberapa jenis enzim

Enzim	Waktu	Ulangan		Rerata	SD
		1	2		
α-amilase	0	5.80	6.09	5.9450	0.2051
	12	5.74	5.77	5.7550	0.0212
	24	5.74	5.78	5.7600	0.0283
	36	5.62	5.81	5.7150	0.1344
	48	5.62	5.73	5.6750	0.0778
	60	5.52	5.71	5.6150	0.1344
	72	5.36	5.73	5.5450	0.2616
	84	5.23	5.69	5.4600	0.3253
	96	5.12	5.7	5.4100	0.4101
	108	5.08	5.65	5.3650	0.4031
	120	5.05	5.54	5.2950	0.3465
	132	5.05	5.38	5.2150	0.2333
	144	4.99	5.27	5.1300	0.1980
	156	5.02	5.21	5.1150	0.1344
168	4.95	5.19	5.0700	0.1697	
xylanase	0	5.82	6.05	5.9350	0.1626
	12	5.71	5.64	5.6750	0.0495
	24	5.72	5.68	5.7000	0.0283
	36	5.73	5.5	5.6150	0.1626
	48	5.63	5.3	5.4650	0.2333
	60	5.66	5.35	5.5050	0.2192
	72	5.43	5.36	5.3950	0.0495

	84	5.54	5.3	5.4200	0.1697
	96	5.23	5.3	5.2650	0.0495
	108	4.81	5.32	5.0650	0.3606
	120	4.67	5.2	4.9350	0.3748
	132	4.66	5.19	4.9250	0.3748
	144	4.66	5.18	4.9200	0.3677
	156	4.79	5.17	4.9800	0.2687
	168	4.72	5.16	4.9400	0.3111
mannanase	0	5.85	6.08	5.9650	0.1626
	12	5.73	5.69	5.7100	0.0283
	24	5.20	5.45	5.3250	0.1768
	36	5.16	5.25	5.2050	0.0636
	48	5.00	5.12	5.0600	0.0849
	60	5.03	5.08	5.0550	0.0354
	72	4.82	5.1	4.9600	0.1980
	84	4.90	5.04	4.9700	0.0990
	96	4.87	5.04	4.9550	0.1202
	108	4.90	5.04	4.9700	0.0990
	120	4.87	4.93	4.9000	0.0424
	132	4.85	4.9	4.8750	0.0354
	144	4.79	4.87	4.8300	0.0566
	156	5.02	4.88	4.9500	0.0990
	168	4.83	4.85	4.8400	0.0141
cellulase	0	6.16	6.09	6.1250	0.0495
	12	5.96	5.7	5.8300	0.1838
	24	5.94	5.73	5.8350	0.1485
	36	5.51	5.68	5.5950	0.1202
	48	5.31	5.52	5.4150	0.1485
	60	5.25	5.36	5.3050	0.0778
	72	5.08	5.29	5.1850	0.1485
	84	5.16	5.22	5.1900	0.0424
	96	5.16	5.23	5.1950	0.0495
	108	5.13	5.21	5.1700	0.0566
	120	5.11	5.13	5.1200	0.0141
	132	5.08	5.11	5.0950	0.0212
	144	5.04	5.08	5.0600	0.0283
	156	5.19	5.07	5.1300	0.0849
	168	5.06	5.15	5.1050	0.0636

Lampiran 13. Tabel rata-rata hasil pengamatan pH selama proses likuifikasi tepung empulur sagu menggunakan beberapa jenis enzim

Waktu	Enzim				Rerata	SD
	α -amylase	xylanase	mannanase	cellulase		
0	5.95	5.94	5.97	6.13	5.9925	0.0892
12	5.76	5.68	5.71	5.83	5.7425	0.0669
24	5.76	5.70	5.33	5.84	5.6550	0.2268
36	5.72	5.62	5.21	5.60	5.5325	0.2246
48	5.68	5.47	5.06	5.42	5.4038	0.2554
60	5.62	5.51	5.06	5.31	5.3700	0.2461
72	5.55	5.40	4.96	5.19	5.2713	0.2547
84	5.46	5.42	4.97	5.19	5.2600	0.2270
96	5.41	5.27	4.96	5.20	5.2063	0.1899
108	5.37	5.07	4.97	5.17	5.1425	0.1693
120	5.30	4.94	4.90	5.12	5.0625	0.1826
132	5.22	4.93	4.88	5.10	5.0275	0.1565
144	5.13	4.92	4.83	5.06	4.9850	0.1353
156	5.12	4.98	4.95	5.13	5.0438	0.0920
168	5.07	4.94	4.84	5.11	4.9888	0.1220
Rerata	5.4713	5.3160	5.1047	5.3570		
SD	0.2715	0.3379	0.3288	0.3329		

Lampiran 14. ANOVA hasil pengamatan derajat keasaman selama proses likuifikasi tepung empulur sagu

Tests of Between-Subjects Effects

Dependent Variable: pH Likuifikasi

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	13.503 ^a	59	.229	6.659	.000
Intercept	3386.400	1	3386.400	98539.732	.000
enzim	2.112	3	.704	20.490	.000
waktu	10.378	14	.741	21.571	.000
enzim * waktu	1.012	42	.024	.701	.887
Error	2.062	60	.034		
Total	3401.965	120			
Corrected Total	15.564	119			

a. R Squared = .868 (Adjusted R Squared = .737)

Lampiran 15. Uji lanjut pengaruh tunggal jenis enzim terhadap derajat keasaman selama proses likuifikasi tepung empulur sagu pH Likuifikasi

Duncan^{a,b}

Jenis Enzim	N	Subset		
		1	2	3
mannanase	30	5.1047		
xylanase	30		5.3160	
cellulase	30		5.3570	
a-amylase	30			5.4713
Sig.		1.000	.395	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .034.

a. Uses Harmonic Mean Sample Size = 30.000.

b. Alpha = 0.05.

Lampiran 16. Uji lanjut pengaruh tunggal waktu terhadap derajat keasaman selama proses likuifikasi tepung empulur sagu pH Likuifikasi

Duncan^{a,b}

Waktu	N	Subset								
		1	2	3	4	5	6	7	8	9
144	8	4.9850								
168	8	4.9888								
132	8	5.0275	5.0275							
156	8	5.0438	5.0438							
120	8	5.0625	5.0625	5.0625						
108	8	5.1425	5.1425	5.1425	5.1425					
96	8		5.2063	5.2063	5.2063	5.2063				
84	8			5.2600	5.2600	5.2600				
72	8				5.2713	5.2713				
60	8					5.3700	5.3700			
48	8					5.4038	5.4038			
36	8						5.5325	5.5325		
24	8							5.6550	5.6550	
12	8								5.7425	
0	8									5.9925
Sig.		.143	.090	.055	.212	.060	.102	.191	.349	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .034.

a. Uses Harmonic Mean Sample Size = 8.000.

b. Alpha = 0.05.

Lampiran 17. Tabel hasil pengamatan pH selama proses sakarifikasi tepung empulur sagu menggunakan beberapa jenis enzim

Enzim	Waktu	Ulangan		Rerata	SD
		1	2		
α-amilase	168	4.95	5.19	5.0700	0.1697
	180	4.76	4.56	4.6600	0.1414
	192	4.77	4.52	4.6450	0.1768
	204	4.64	4.45	4.5450	0.1344
	216	4.93	4.4	4.6650	0.3748
	228	4.89	4.45	4.6700	0.3111
	240	4.85	4.52	4.6850	0.2333
xylanase	168	4.72	5.16	4.9400	0.3111
	180	4.41	4.47	4.4400	0.0424
	192	4.45	4.45	4.4500	0.0000
	204	4.35	4.42	4.3850	0.0495
	216	4.75	4.38	4.5650	0.2616
	228	4.69	4.41	4.5500	0.1980
	240	4.66	4.52	4.5900	0.0990
mannanase	168	4.83	4.85	4.8400	0.0141
	180	4.45	4.41	4.4300	0.0283
	192	4.50	4.4	4.4500	0.0707
	204	4.42	4.34	4.3800	0.0566
	216	4.79	4.33	4.5600	0.3253
	228	4.71	4.36	4.5350	0.2475
	240	4.73	4.44	4.5850	0.2051
cellulase	168	5.06	5.15	5.1050	0.0636
	180	4.44	4.47	4.4550	0.0212
	192	4.48	4.39	4.4350	0.0636
	204	4.40	4.34	4.3700	0.0424
	216	4.74	4.33	4.5350	0.2899
	228	4.71	4.37	4.5400	0.2404
	240	4.72	4.44	4.5800	0.1980

Lampiran 18. Tabel rata-rata hasil pengamatan pH selama proses sakarifikasi tepung empulur sagu menggunakan beberapa jenis enzim

Waktu	Enzim				Rerata	SD
	α -amylase	xylanase	mannanase	cellulase		
168	5.07	4.94	4.84	5.11	4.9888	0.1220
180	4.66	4.44	4.43	4.46	4.4963	0.1096
192	4.65	4.45	4.45	4.44	4.4950	0.1002
204	4.55	4.385	4.38	4.37	4.4200	0.0836
216	4.67	4.565	4.56	4.54	4.5813	0.0574
228	4.67	4.55	4.54	4.54	4.5738	0.0645
240	4.69	4.59	4.59	4.58	4.6100	0.0502
Rerata	4.7057	4.5600	4.5400	4.5743		
SD	0.1672	0.1837	0.1518	0.2449		

Lampiran 19. ANOVA hasil pengamatan pH selama proses sakarifikasi tepung empulur sagu menggunakan beberapa jenis enzim

Tests of Between-Subjects Effects

Dependent Variable: pH Sakarifikasi

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1.974 ^a	27	.073	2.011	.036
Intercept	1182.385	1	1182.385	32521.406	.000
enzim2	.237	3	.079	2.174	.113
waktu2	1.650	6	.275	7.565	.000
enzim2 * waktu2	.086	18	.005	.132	1.000
Error	1.018	28	.036		
Total	1185.377	56			
Corrected Total	2.992	55			

a. R Squared = .660 (Adjusted R Squared = .332)

Lampiran 20. Uji lanjut pengaruh tunggal jenis enzim terhadap derajat keasaman selama proses sakarifikasi tepung empulur sagu pH Sakarifikasi

Duncan^{a,b}

Jenis Enzim	N	Subset	
		1	2
mannanase+AMG	14	4.5400	
xylanase+AMG	14	4.5600	4.5600
cellulase+AMG	14	4.5743	4.5743
a-amylase+AMG	14		4.7057
Sig.		.658	.065

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .036.

a. Uses Harmonic Mean Sample Size = 14.000.

b. Alpha = 0.05.

Lampiran 21. Uji lanjut pengaruh tunggal waktu terhadap derajat keasaman selama proses sakarifikasi tepung empulur sagu pH Sakarifikasi

Duncan^{a,b}

Waktu Sakarifikasi	N	Subset	
		1	2
204	8	4.4200	
192	8	4.4950	
180	8	4.4963	
228	8	4.5738	
216	8	4.5813	
240	8	4.6100	
168	8		4.9888
Sig.		.089	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .036.

a. Uses Harmonic Mean Sample Size = 8.000.

b. Alpha = 0.05.

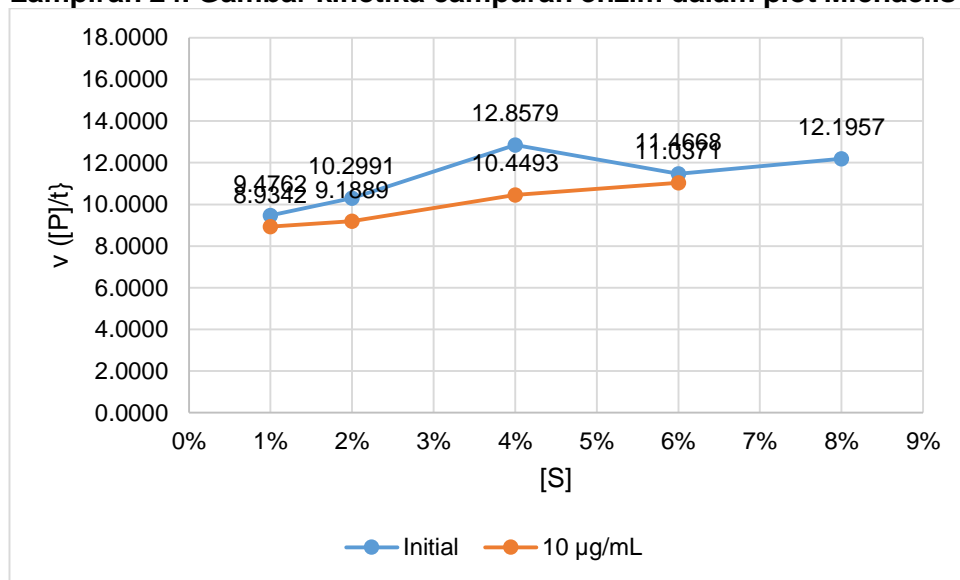
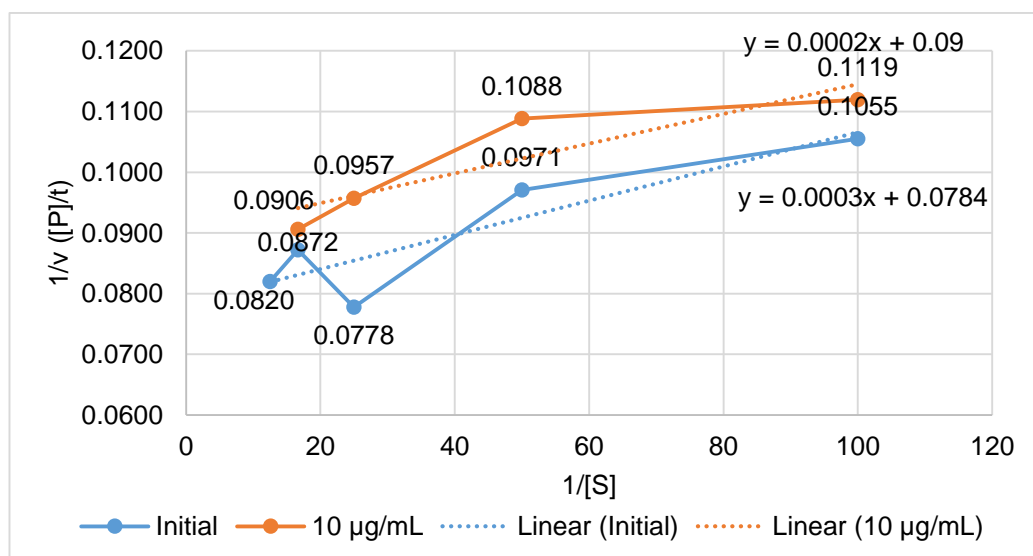
Lampiran 22. Tabel hasil pengamatan penambahan produk selama proses hidrolisis enzimatis

[i]	[S]	t	Ulangan		Rerata	SD
			1	2		
Initial	1%	0	0.2476	0.1088	0.1782	0.0982
		12	0.5337	0.4937	0.5137	0.0283
		24	0.4694	0.6395	0.5545	0.1203
		36	0.6621	0.8163	0.7392	0.1091
		48	0.8903	0.9404	0.9154	0.0355
		60	0.9937	1.0392	1.0165	0.0321
		72	1.0611	1.1034	1.0823	0.0299
	2%	0	0.1818	0.1721	0.1770	0.0069
		12	0.5494	0.5266	0.5380	0.0161
		24	0.6685	0.6638	0.6661	0.0033
		36	0.8777	0.8238	0.8508	0.0381
		48	0.9906	0.9279	0.9592	0.0443
		60	1.0878	1.0172	1.0525	0.0499
	4%	0	0.1542	0.1724	0.1633	0.0129
		12	0.6295	0.7069	0.6682	0.0548
		24	0.8868	0.8878	0.8873	0.0007
		36	1.0332	1.1599	1.0966	0.0896
		48	1.3056	1.1646	1.2351	0.0997
		60	1.3197	1.3448	1.3323	0.0177
	6%	0	0.2100	0.2470	0.2285	0.0262
		12	0.6828	0.6936	0.6882	0.0076

		24	0.9103	0.7759	0.8431	0.0951
		36	1.1009	0.9680	1.0345	0.0940
		48	1.3809	1.0345	1.2077	0.2449
		60	1.3574	1.0580	1.2077	0.2117
		72	1.4843	1.2680	1.3762	0.1529
	8%	0	0.2047	0.2016	0.2031	0.0022
		12	0.6502	0.6466	0.6484	0.0025
		24	0.8803	0.7984	0.8393	0.0579
		36	1.0708	0.9730	1.0219	0.0692
		48	1.3527	1.0408	1.1967	0.2206
		60	1.2915	1.1865	1.2390	0.0743
		72	1.4404	1.3197	1.3801	0.0853
10 µg/mL	1%	0	0.1376	0.1436	0.1406	0.0042
		12	0.5212	0.5415	0.5313	0.0144
		24	0.7730	0.7138	0.7434	0.0419
		36	0.7837	0.8514	0.8176	0.0479
		48	0.8824	0.9577	0.9201	0.0532
		60	0.9906	1.0408	1.0157	0.0355
		72	1.0690	1.0658	1.0674	0.0022
	2%	0	0.1467	0.1536	0.1502	0.0049
		12	0.5878	0.5995	0.5937	0.0083
		24	0.8755	0.7928	0.8342	0.0585
		36	0.8966	0.9404	0.9185	0.0310
		48	1.0204	1.0549	1.0376	0.0244
		60	1.1489	1.1379	1.1434	0.0078
		72	1.2382	1.0517	1.1450	0.1319
	4%	0	0.1749	0.1984	0.1867	0.0166
		12	0.6246	0.6497	0.6371	0.0177
		24	0.9461	0.8041	0.8751	0.1004
		36	0.9944	0.9793	0.9868	0.0106
		48	1.0204	1.1991	1.1097	0.1263
		60	1.2806	1.2398	1.2602	0.0288
		72	1.4185	1.1097	1.2641	0.2183
	6%	0	0.1715	0.1987	0.1851	0.0193
		12	0.5807	0.6246	0.6027	0.0310
		24	0.8878	0.7608	0.8243	0.0898
		36	0.9480	0.9755	0.9618	0.0195
		48	1.0611	1.0361	1.0486	0.0177
		60	1.2335	1.1928	1.2132	0.0288
		72	1.3229	1.2069	1.2649	0.0820

Lampiran 23. Tabel kinetika enzim selama proses hidrolisis enzimatis

[i]	[S]	1/[v]	v	1/v
Initial	1%	100	9.4762	0.1055
	2%	50	10.2991	0.0971
	4%	25	12.8579	0.0778
	6%	16,67	11.4668	0.0872
	8%	12,20	12.1957	0.0820
10 µg/mL	1%	100	8.9342	0.1119
	2%	50	9.1889	0.1088
	4%	25	10.4493	0.0957
	6%	16,67	11.0371	0.0906

Lampiran 24. Gambar kinetika campuran enzim dalam plot Michaelis-Menten**Lampiran 25. Gambar kinetika campuran enzim dalam plot Lineaweaver-Burk**

Lampiran 26. Dokumentasi penelitian