1. **Cara Analisa Bahan Kering / Padatan Total**

Analisa kandungan total padatan (*total solid/TS*) dilakukan dengan metode standar APHA :

- Cawan dikeringkan pada temperatur 103-105°C selama 1 jam, kemudian didinginkan dan disimpan pada desikator sampai cawan akan digunakan.
- Berat cawan ditimbang dan dicatat.
- *Sample* dimasukkan ke cawan sebanyak 25-50 g dan ditimbang, kemudian dikeringkan di dalam oven pada temperature 103-105°C selama 1 jam.
- *Sample* yang telah dikeringkan kemudian didinginkan pada desikator dan ditimbang sampai beratnya berkurang 4% atau 50 mg.

Menurut metode standar APHA, rumus kandungan *total solid* dapat dilihat pada persamaan di bawah ini.

Kadar Bahan Kering (BK) = [(W3-W1) / (W2-W1)] x 100 %

Keterangan :

W1 : berat cawan

W2 : berat cawan dan berat sampel

W3 : berat cawan dan berat sampel setelah dioven

Total Solid Sekam Padi

W1 : 24,96 gram

W2 : 28 gram

W3 : 27,8 gram

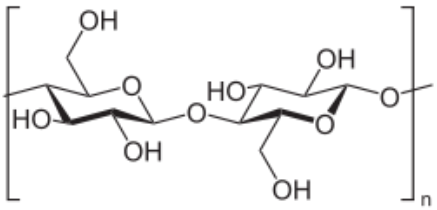
Kadar Bahan Kering (BK) = [(W3-W1)/(W2-W1)]x100 %

= [(27,8 – 24,96)/(28 – 24,96)]x100%

= 93,4 %

2. **Pehitungan C/N Ratio**

a. Kadar C dalam sekam padi. Sekam padi dianggap dimoninasi oleh selulosa dan hemiselulosa dengan rumus molekul $(C_6H_{10}O_5)_n$.



Gambar 1. Selulosa
Sumber: https://id.wikipedia.org/wiki/Selulosa, 2016

Bila diambil 1 (satu) monomer $\underline{C_6}\underline{H_{10}}\underline{O_5}$ dengan berat molekul

(6 x 12) + (10 x 1) + (16 x 5) = 180

Maka kadar karbon C = [(6x12) / 180] x 100 % = 40 %

Atau kandungan atom C = 0,4 gram per gram sekam padi

b. Kadar N dalam urea. Urea mempunyai rumus molekul $CO(NH_2)_2$ dengan berat molekul 60. Kadar N dalam urea = [(2 x 14) / 60] x 100 %

= 46,66 %

Atau: kadar N dalam urea = 0,4666 gram/gram urea

c. Penentuan C/N ratio

Kadar padatan dalam sekam	=	93.4	%
Volume larutan dalam digester	=	200	ml
Variabel total padatan	=	21	%
Berat padatan = 0,21 x 200	=	42	gram
Kebutuhan sekam padi	=	44.97	gram
Kebutuhan Cairan = 200 – 44,97	=	155.03	ml
Kebutuhan rumen = air = 155,03/2	=	77.52	ml

Perhitungan C/N ratio

C dalam sekam = 0,4 x 44,97	=	17,988	gram
N dalam sekam = 0,466 x 1,54	=	0,71764	gram
C/N = 17,988/0,71764	=	25	

Tabel 1. Kebutuhan Bahan Keseluruhan Masing-Masing Variabel

Variabel	Enzim	NaOH	Volume Air, ml	Volume rumen, ml	Sekam padi, gram	Kebutuhan Enzim (ml)				Kebutuhan Urea (gram)
	Campuran	6% ml				9%	12%	15%	18%	
1	√	67,5	77.52	77.52	44,97	18,00	-	-	-	1,55
2	√	67,5	77.52	77.52	44,97	-	24,00	-	-	1,55
3	√	67,5	77.52	77.52	44,97	-	-	30,00		1,55
4	√	67,5	77.52	77.52	44,97	-	-	-	36,00	1,55
5	√	67,5	77.52	77.52	44,97	18,00	-	-	-	1,55
6	√	67,5	77.52	77.52	44,97	-	24,00	-	-	1,55
7	√	67,5	77.52	77.52	44,97	-	-	30,00	-	1,55
8	√	67,5	77.52	77.52	44,97	-	-	-	36,00	1,55
9	KONTROL	67,5	77.52	77.52	44,97	-	-	-	-	1,55
10	KONTROL	67,5	77.52	77.52	44,97	-	-	-	-	1,55

3. Detail Enzim Amilase dan Selulase

Tabel 1. Keterangan Enzim berdasarkan Sa'adah pada tahun 2010

Enzim	Sumber	Aplikasi
Amilase	*Bacillus subtilis*	Tekstil
	Aspergillus oryzae	Pelarutan pati
	Penicillium roqueforti	Produksi glukosa
	Aspergillus niger	
Selulase	*Aspergillus niger*	Pengurangan viskositas
	Tricoderma sp.	Membantu sistem pencernaan
		Degradasi selulosa

Enzim yang digunakan dalam penelitian ini adalah enzim murni. Untuk enzim Selulase, karena dibeli secara online sehingga belum ditemukan karakteristik pasti dari enzim, sedangkan karena enzim Amilase dibeli dari dosen Teknik Kimia sehingga dapat diketahui karakteristik dari enzim tersebut. Berikut adalah karakteristik dari enzim Amilase yang digunakan pada penelitian ini :

- Keaktifan enzim, Unit KNU = 330/g
- Densitas = 1,247 g/cm^3
- Total Visible Count = < 100/g
- Coliform bacteria = < 4/g

4. Hasil Data Pengamatan

Tabel 3. Data Volume Biogas Harian dengan Variasi Pemberian Campuran Enzim Amilase dan Selulase

Hari ke	C-9-1	C-9-2	C-12-1	C-12-2	C-15-1	C-15-2	C-18-1	C-18-2	C-Control-1	C-Control-2
0	0	0	0	0	0	0	0	0	0	0
2	38	40	30	18	0	10	10	380	0	0
4	90	218	8	144	1	4	4	360	0	0
6	18	252	26	2	2	14	98	432	2	3
8	0	0	220	0	3	7	170	465	5	4
10	0	0	76	337.5	244	7	5	342.5	0	0
12	110	3	43.5	3.5	225	4	3	257	50	3
14	139	1	18	1.5	194	3	8	165	20	24
16	52	63	13	79.5	178	4	9	176	12	2
18	60	1	7.5	25	124	2	3	140	38	0.5
20	18	0.5	0	12	25	2.5	8	55	20.5	4
22	16	4	2	13	2	0.5	1.5	42	29	1.5
24	8	2	0	3	0	0.5	6	23	16.5	31
26	2	1.5	0	13	0	1	2	12	11	115
28	1.5	8.5	0	4	1	2	2	14	20	64
30	0	9.5	0	10	0	2	5	2	11	2
32	0	8	2	15	0	7	0.5	2	20	13
34	0	5	0	8	0	2	0	0	12	0.5
36	0	3	0	4	0	0	0	0	8	0.5
38	0	2	0	3	0	0	0	0	3	0
40	0	4	0	5	0	0	0	0	5	0
42	0	0	0	0	0	0	0	0	8	0
44	0	0	0	0	0	0	0	0	7	0
46	0	0	0	0	0	0.5	0	40	0	3
48	0	0	0	0	0	0	0	12	0	5
50	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0
54	0	0	0	0	0	0	0	0	0	0
56	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0

Tabel 4. Data Volume Biogas Kumulatif dengan Variasi Pemberian Campuran Enzim Amilase dan Selulase

Hari ke	C-9-1	C-9-2	C-12-1	C-12-2	C-15-1	C-15-2	C-18-1	C-18-2	C-Control-1	C-Control-2
0	0	0	0	0	0	0	0	0	0	0
2	38	40	30	18	0	10	10	380	0	0
4	128	258	38	162	1	14	14	740	0	0
6	146	510	64	164	3	28	112	1172	2	3
8	146	510	284	164	6	35	282	1637	7	7
10	146	510	360	501.5	250	42	287	1979.5	7	7
12	256	513	403.5	505	475	46	290	2236.5	57	10
14	395	514	421.5	506.5	669	49	298	2401.5	77	34
16	447	577	434.5	586	847	53	307	2577.5	89	36
18	507	578	442	611	971	55	310	2717.5	127	36.5
20	525	578.5	442	623	996	57.5	318	2772.5	147.5	40.5
22	541	582.5	444	636	998	58	319.5	2814.5	176.5	42
24	549	584.5	444	639	998	58.5	325.5	2837.5	193	73
26	551	586	444	652	998	59.5	327.5	2849.5	204	188
28	552.5	594.5	444	656	999	61.5	329.5	2863.5	224	252
30	552.5	604	444	666	999	63.5	334.5	2865.5	235	254
32	552.5	612	446	681	999	70.5	335	2867.5	255	267
34	552.5	617	446	689	999	72.5	335	2867.5	267	267.5
36	552.5	620	446	693	999	72.5	335	2867.5	275	268
38	552.5	622	446	696	999	72.5	335	2867.5	278	268
40	552.5	626	446	701	999	72.5	335	2867.5	283	268
42	552.5	626	446	701	999	72.5	335	2867.5	291	268
44	552.5	626	446	701	999	72.5	335	2867.5	298	268
46	552.5	626	446	701	999	73	335	2907.5	298	271
48	552.5	626	446	701	999	73	335	2919.5	298	276
50	552.5	626	446	701	999	73	335	2919.5	298	276
52	552.5	626	446	701	999	73	335	2919.5	298	276
54	552.5	626	446	701	999	73	335	2919.5	298	276
56	552.5	626	446	701	999	73	335	2919.5	298	276
58	552.5	626	446	701	999	73	335	2919.5	298	276
60	552.5	626	446	701	999	73	335	2919.5	298	276

Tabel 5. Data Volume Biogas Kumulatif per TS dengan Variasi Pemberian Campuran Enzim Amilase dan Selulase

Hari ke	C-9-1	C-9-2	C-12-1	C-12-2	C-15-1	C-15-2	C-18-1	C-18-2	C-Control-1	C-Control-2
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.41	0.43	0.32	0.19	0.00	0.11	0.11	4.07	0.00	0.00
4	1.37	2.76	0.41	1.73	0.01	0.15	0.15	7.92	0.00	0.00
6	1.56	5.46	0.69	1.76	0.03	0.30	1.20	12.55	0.02	0.03
8	1.56	5.46	3.04	1.76	0.06	0.37	3.02	17.53	0.07	0.07
10	1.56	5.46	3.85	5.37	2.68	0.45	3.07	21.19	0.07	0.07
12	2.74	5.49	4.32	5.41	5.09	0.49	3.10	23.95	0.61	0.11
14	4.23	5.50	4.51	5.42	7.16	0.52	3.19	25.71	0.82	0.36
16	4.79	6.18	4.65	6.27	9.07	0.57	3.29	27.60	0.95	0.39
18	5.43	6.19	4.73	6.54	10.40	0.59	3.32	29.10	1.36	0.39
20	5.62	6.19	4.73	6.67	10.66	0.62	3.40	29.68	1.58	0.43
22	5.79	6.24	4.75	6.81	10.69	0.62	3.42	30.13	1.89	0.45
24	5.88	6.26	4.75	6.84	10.69	0.63	3.49	30.38	2.07	0.78
26	5.90	6.27	4.75	6.98	10.69	0.64	3.51	30.51	2.18	2.01
28	5.92	6.37	4.75	7.02	10.70	0.66	3.53	30.66	2.40	2.70
30	5.92	6.47	4.75	7.13	10.70	0.68	3.58	30.68	2.52	2.72
32	5.92	6.55	4.78	7.29	10.70	0.75	3.59	30.70	2.73	2.86
34	5.92	6.61	4.78	7.38	10.70	0.78	3.59	30.70	2.86	2.86
36	5.92	6.64	4.78	7.42	10.70	0.78	3.59	30.70	2.94	2.87
38	5.92	6.66	4.78	7.45	10.70	0.78	3.59	30.70	2.98	2.87
40	5.92	6.70	4.78	7.51	10.70	0.78	3.59	30.70	3.03	2.87
42	5.92	6.70	4.78	7.51	10.70	0.78	3.59	30.70	3.12	2.87
44	5.92	6.70	4.78	7.51	10.70	0.78	3.59	30.70	3.19	2.87
46	5.92	6.70	4.78	7.51	10.70	0.78	3.59	31.13	3.19	2.90
48	5.92	6.70	4.78	7.51	10.70	0.78	3.59	31.26	3.19	2.96
50	5.92	6.70	4.78	7.51	10.70	0.78	3.59	31.26	3.19	2.96
52	5.92	6.70	4.78	7.51	10.70	0.78	3.59	31.26	3.19	2.96
54	5.92	6.70	4.78	7.51	10.70	0.78	3.59	31.26	3.19	2.96
56	5.92	6.70	4.78	7.51	10.70	0.78	3.59	31.26	3.19	2.96
58	5.92	6.70	4.78	7.51	10.70	0.78	3.59	31.26	3.19	2.96
60	5.92	6.70	4.78	7.51	10.70	0.78	3.59	31.26	3.19	2.96
Total	147.4	180.91	126.65	188.01	259.05	19.06	95.18	816.50	62.92	54.18

Tabel 6. Volume Biogas Harian Data Terpakai

Hari	C-9	C-12	C-15	C-18	C-Control
0	0	0	0	0	0
2	40	18	10	380	0
4	90	144	4	360	0
6	18	26	14	432	2
8	0	220	7	465	5
10	0	337.5	244	342.5	0
12	110	43.5	225	257	50
14	139	18	194	165	24
16	63	13	178	176	12
18	60	25	124	140	38
20	18	12	25	55	20.5
22	16	13	2	42	29
24	8	3	0.5	23	31
26	2	13	1	12	115
28	8.5	4	2	14	64
30	9.5	10	2	5	11
32	8	15	7	2	20
34	5	8	2	0	12
36	3	4	0	0	8
38	2	3	0	0	3
40	4	5	0	0	5
42	0	0	0	0	8
44	0	0	0	0	7
46	0	0	0	40	3
48	0	0	0	12	5
50	0	0	0	0	0
52	0	0	0	0	0
54	0	0	0	0	0
56	0	0	0	0	0
58	0	0	0	0	0
60	0	0	0	0	0
Kumulatif	**604**	**935**	**1041.5**	**2922.5**	**472.5**
Rata-rata	**23.23077**	**35.96154**	**40.05769**	**112.4038**	**18.17308**
Max	**139**	**337.5**	**244**	**465**	**115**

Tabel 7. Volume Biogas Kumulatif Data Terpakai

Hari ke	C-9	C-12	C-15	C-18	C-Control
0	0	0	0	0	0
2	40	18	10	380	0
4	130	162	14	740	0
6	148	188	28	1172	2
8	148	408	35	1637	7
10	148	745.5	279	1979.5	7
12	258	789	504	2236.5	57
14	397	807	698	2401.5	81
16	460	820	876	2577.5	93
18	520	845	1000	2717.5	131
20	538	857	1025	2772.5	151.5
22	554	870	1027	2814.5	180.5
24	562	873	1027.5	2837.5	211.5
26	564	886	1028.5	2849.5	326.5
28	572.5	890	1030.5	2863.5	390.5
30	582	900	1032.5	2868.5	401.5
32	590	915	1039.5	2870.5	421.5
34	595	923	1041.5	2870.5	433.5
36	598	927	1041.5	2870.5	441.5
38	600	930	1041.5	2870.5	444.5
40	604	935	1041.5	2870.5	449.5
42	604	935	1041.5	2870.5	457.5
44	604	935	1041.5	2870.5	464.5
46	604	935	1041.5	2910.5	467.5
48	604	935	1041.5	2922.5	472.5
50	604	935	1041.5	2922.5	472.5
52	604	935	1041.5	2922.5	472.5
54	604	935	1041.5	2922.5	472.5
56	604	935	1041.5	2922.5	472.5
58	604	935	1041.5	2922.5	472.5
60	604	935	1041.5	2922.5	472.5

Tabel 8. Volume Biogas Kumulatif Per TS Data Terpakai

Hari ke	C-9	C-12	C-15	C-18	C-Control
0	0	0	0	0	0
2	0.952381	0.428571	0.238095	9.047619	0
4	3.095238	3.857143	0.333333	17.61905	0
6	3.52381	4.47619	0.666667	27.90476	0.047619
8	3.52381	9.714286	0.833333	38.97619	0.166667
10	3.52381	17.75	6.642857	47.13095	0.166667
12	6.142857	18.78571	12	53.25	1.357143
14	9.452381	19.21429	16.61905	57.17857	1.928571
16	10.95238	19.52381	20.85714	61.36905	2.214286
18	12.38095	20.11905	23.80952	64.70238	3.119048
20	12.80952	20.40476	24.40476	66.0119	3.607143
22	13.19048	20.71429	24.45238	67.0119	4.297619
24	13.38095	20.78571	24.46429	67.55952	5.035714
26	13.42857	21.09524	24.4881	67.84524	7.77381
28	13.63095	21.19048	24.53571	68.17857	9.297619
30	13.85714	21.42857	24.58333	68.29762	9.559524
32	14.04762	21.78571	24.75	68.34524	10.03571
34	14.16667	21.97619	24.79762	68.34524	10.32143
36	14.2381	22.07143	24.79762	68.34524	10.5119
38	14.28571	22.14286	24.79762	68.34524	10.58333
40	14.38095	22.2619	24.79762	68.34524	10.70238
42	14.38095	22.2619	24.79762	68.34524	10.89286
44	14.38095	22.2619	24.79762	68.34524	11.05952
46	14.38095	22.2619	24.79762	69.29762	11.13095
48	14.38095	22.2619	24.79762	69.58333	11.25
50	14.38095	22.2619	24.79762	69.58333	11.25
52	14.38095	22.2619	24.79762	69.58333	11.25
54	14.38095	22.2619	24.79762	69.58333	11.25
56	14.38095	22.2619	24.79762	69.58333	11.25
58	14.38095	22.2619	24.79762	69.58333	11.25
60	14.38095	22.2619	24.79762	69.58333	11.25

5. Hasil Perhitungan Menggunakan *Polymath* 6.1

➢ C-Control (tanpa penambahan campuran enzim_

Model: P = A*exp(-exp(U*2.718*(L-t)/A+1))

Variable	Initial guess	Value	95% confidence
A	12	11.1126	0.348237
U	3	0.606855	0.080869
L	4	14.01395	1.251305

Nonlinear regression settings

Max # iterations = 64

Precision

R^2	0.990261
R^2adj	0.989566
Rmsd	0.080262
Variance	0.221096

➢ C-9 (dengan penambahan campuran enzim 9%)

Model: P = A*exp(-exp(U*2.718*(L-t)/A+1))

Variable	Initial guess	Value	95% confidence
A	15	14.08238	0.381808
U	3	0.887785	0.138704
L	2	4.267224	1.31674

Nonlinear regression settings

Max # iterations = 64

Precision

R^2	0.979249
R^2adj	0.977767
Rmsd	0.121548
Variance	0.507058

➢ **C-12 (dengan penambahan campuran enzim 12%)**

Model: P = A*exp(-exp(U*2.718*(L-t)/A+1))

Variable	Initial guess	Value	95% confidence
A	23	21.46866	0.411172
U	3	2.528054	0.453527
L	2	3.942374	0.829154

Nonlinear regression settings

Max # iterations = 64

Precision

R^2	0.983334
R^2adj	0.982143
Rmsd	0.157033
Variance	0.846344

➢ **C-15 (dengan penambahan campuran enzim 15%)**

Model: P = A*exp(-exp(U*2.718*(L-t)/A+1))

Variable	Initial guess	Value	95% confidence
A	25	24.07631	5.57E-05
U	3	3.265476	3.95E-05
L	2	8.412468	4.93E-05

Nonlinear regression settings

Max # iterations = 64

Precision

R^2	0.998316
R^2adj	0.998196
Rmsd	0.06713
Variance	0.154668

- **C-18 (dengan penambahan campuran enzim 18%)**

Model: P = A*exp(-exp(U*2.718*(L-t)/A+1))

Variable	Initial guess	Value	95% confidence
A	70	68.53301	0.331235
U	3	5.388034	0.192539
L	2	0.919976	0.245037

Nonlinear regression settings

Max # iterations = 64

Precision

R^2	0.998771
R^2adj	0.998684
Rmsd	0.11952
Variance	0.490281

6. Hasil Perhitungan *Yield* Biogas dengan *Polymath* 6.1 dan *Trendline*

Tabel 9. Hasil Perhitungan *Yield* Biogas C-9

Hari ke	C-9	*Trendline*
0	0	0.049667
2	0.952381	0.255674
4	3.095238	0.818144
6	3.52381	1.86813
8	3.52381	3.356947
10	3.52381	5.088952
12	6.142857	6.837342
14	9.452381	8.432033
16	10.95238	9.785
18	12.38095	10.87521
20	12.80952	11.72204
22	13.19048	12.36289
24	13.38095	12.83896
26	13.42857	13.18797
28	13.63095	13.44147
30	13.85714	13.62436
32	14.04762	13.7557
34	14.16667	13.8497
36	14.2381	13.91681
38	14.28571	13.96465
40	14.38095	13.99871
42	14.38095	14.02294
44	14.38095	14.04016
46	14.38095	14.0524
48	14.38095	14.06109
50	14.38095	14.06726
52	14.38095	14.07165
54	14.38095	14.07476
56	14.38095	14.07697
58	14.38095	14.07854
60	14.38095	14.07966

Tabel 10. Hasil Perhitungan *Yield* Biogas C-12

Hari ke	C-12	*Trendline*
0	0	0.001454
2	0.428571	0.136018
4	3.857143	1.488826
6	4.47619	5.257344
8	9.714286	10.22462
10	17.75	14.51957
12	18.78571	17.46845
14	19.21429	19.25712
16	19.52381	20.27274
18	20.11905	20.8296
20	20.40476	21.12932
22	20.71429	21.28908
24	20.78571	21.37379
26	21.09524	21.41859
28	21.19048	21.44225
30	21.42857	21.45473
32	21.78571	21.46131
34	21.97619	21.46479
36	22.07143	21.46662
38	22.14286	21.46758
40	22.2619	21.46809
42	22.2619	21.46836
44	22.2619	21.4685
46	22.2619	21.46857
48	22.2619	21.46861
50	22.2619	21.46863
52	22.2619	21.46865
54	22.2619	21.46865
56	22.2619	21.46865
58	22.2619	21.46866
60	22.2619	21.46866

Tabel 11. Hasil Perhitungan *Yield* Biogas C-15

Hari ke	C-15	*Trendline*
0	0	0
2	0.238095	6.755E-12
4	0.333333	0.0000238
6	0.666667	0.0322651
8	0.833333	1.016682
10	6.642857	5.297368
12	12	11.66865
14	16.61905	17.02538
16	20.85714	20.39823
18	23.80952	22.24055
20	24.40476	23.17989
22	24.45238	23.64321
24	24.46429	23.86813
26	24.4881	23.97649
28	24.53571	24.0285
30	24.58333	24.05342
32	24.75	24.06536
34	24.79762	24.07107
36	24.79762	24.0738
38	24.79762	24.07511
40	24.79762	24.07573
42	24.79762	24.07603
44	24.79762	24.07618
46	24.79762	24.07625
48	24.79762	24.07628
50	24.79762	24.07629
52	24.79762	24.0763
54	24.79762	24.07631
56	24.79762	24.07631
58	24.79762	24.07631
60	24.79762	24.07631

Tabel 12. Hasil Perhitungan *Yield* Biogas C-18

Hari ke	C-18	*Trendline*
0	0	2.505551
2	9.047619	7.918888
4	17.61905	16.77326
6	27.90476	27.36593
8	38.97619	37.65886
10	47.13095	46.3769
12	53.25	53.12327
14	57.17857	58.04364
16	61.36905	61.49579
18	64.70238	63.85723
20	66.0119	65.44604
22	67.0119	66.50353
24	67.55952	67.20244
26	67.84524	67.66223
28	68.17857	67.96381
30	68.29762	68.16123
32	68.34524	68.2903
34	68.34524	68.37461
36	68.34524	68.42965
38	68.34524	68.46558
40	68.34524	68.48902
42	68.34524	68.50432
44	68.34524	68.51429
46	69.29762	68.5208
48	69.58333	68.52505
50	69.58333	68.52781
52	69.58333	68.52962
54	69.58333	68.5308
56	69.58333	68.53157
58	69.58333	68.53207
60	69.58333	68.53239

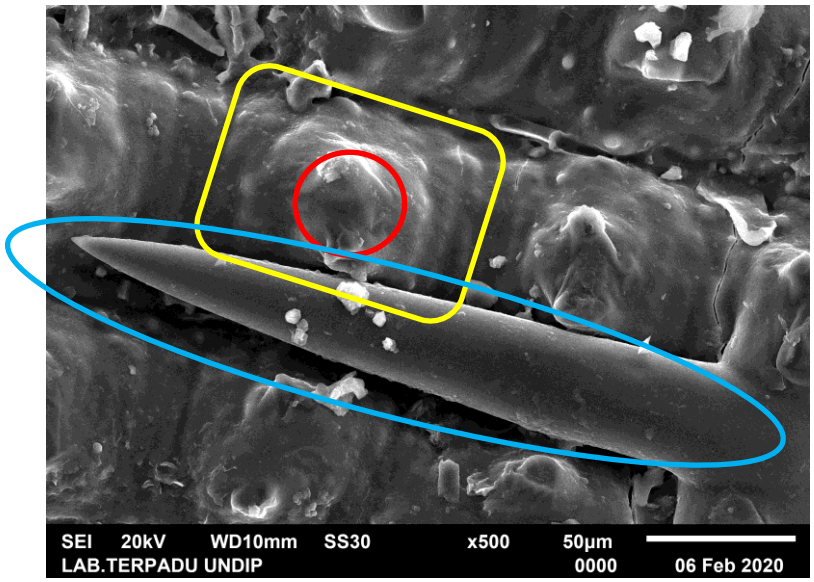
Tabel 13. Hasil Perhitungan *Yield* Biogas C-Control

Hari ke	C-Control	*Trendline*
0	0	3.94E-09
2	0	1.05E-06
4	0	6.71E-05
6	0.047619	0.00147
8	0.166667	0.01457
10	0.166667	0.080128
12	1.357143	0.284425
14	1.928571	0.72918
16	2.214286	1.467857
18	3.119048	2.468819
20	3.607143	3.63326
22	4.297619	4.841749
24	5.035714	5.993457
26	7.77381	7.023424
28	9.297619	7.901884
30	9.559524	8.625145
32	10.03571	9.205187
34	10.32143	9.661369
36	10.5119	10.01496
38	10.58333	10.28609
40	10.70238	10.49232
42	10.89286	10.64826
44	11.05952	10.76564
46	11.13095	10.85371
48	11.25	10.91963
50	11.25	10.96887
52	11.25	11.00561
54	11.25	11.03299
56	11.25	11.05339
58	11.25	11.06857
60	11.25	11.07986

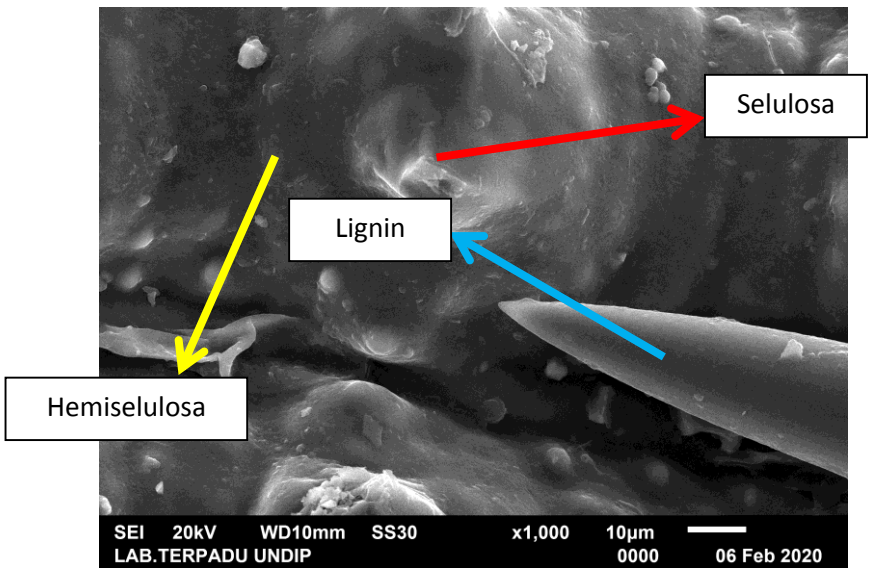
7. Pengukuran pH dan Suhu

Hari Ke-	Suhu	pH
0	28°C	7
10	31°C	6
20	32°C	5
30	34°C	6
40	30°C	6

8. Hasil Uji SEM (*Scanning Electron Microscope*) Sekam Padi

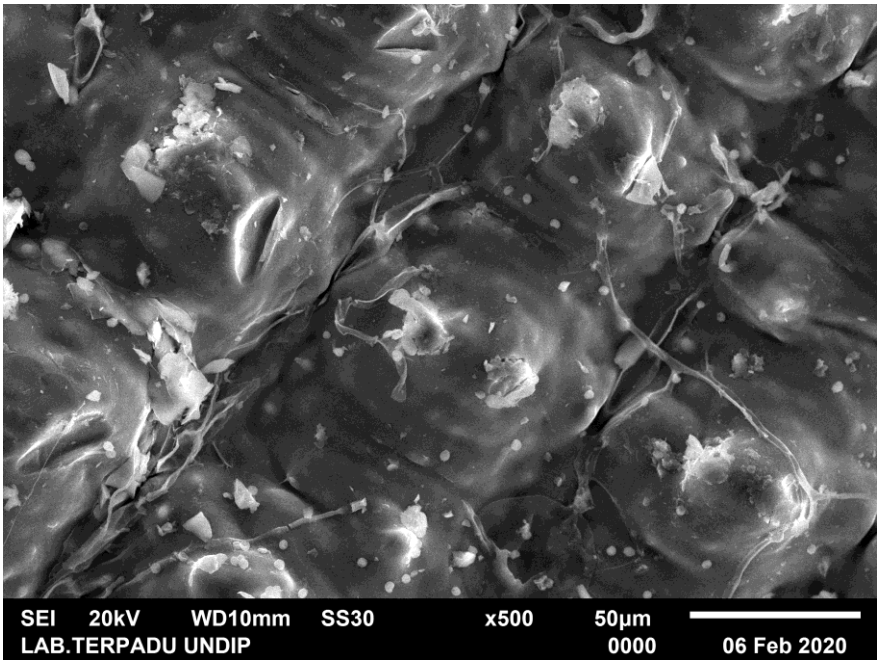


(a)

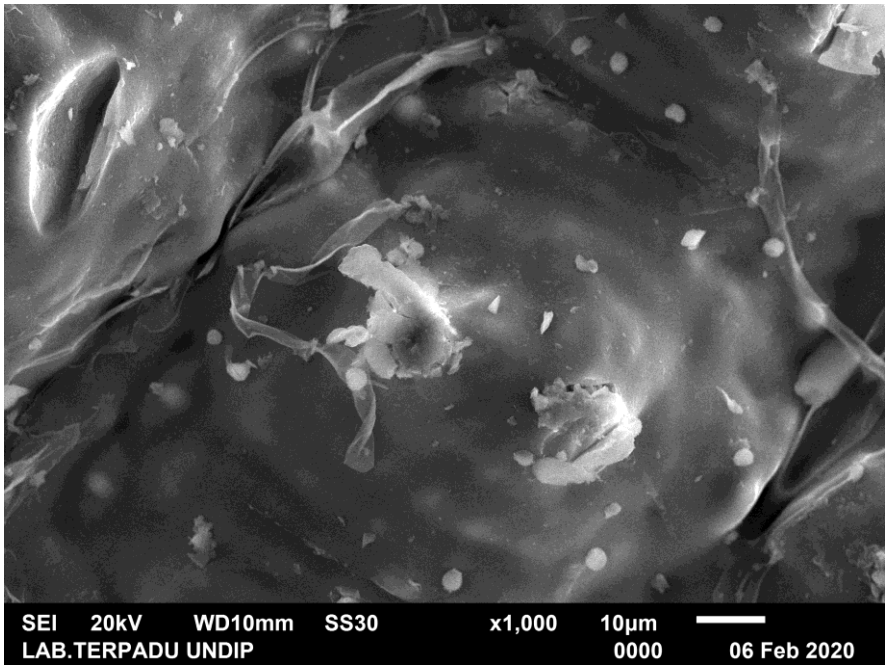


(b)

Gambar 2. Hasil Uji SEM Sekam Padi Sebelum Proses Pembentukan Biogas



(a)



(b)

Gambar 3. Hasil Uji SEM Sekam Padi Setelah Proses Pembentukan Biogas