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Lampiran 1

GAMBAR ALAT DAN BAHAN

A. Alat

1. Galon 19 Liter



2. Ember cat 18 Liter



3. Kayu Pengaduk



4. Selang Gas



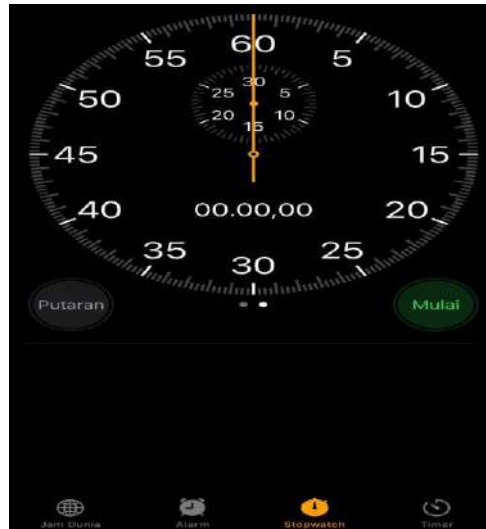
5. Ban



6. Soil Analyzer 4 in 1



7. Stopwatch



8. Timbangan



9. Gelas ukur 1 Liter



B. Bahan

1. Kotoran kuda



2. Limbah Sayur Kol



3. Cairan EM-4

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4. Air



5. Aquadest



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Lampiran 2

GAMBAR PROSES PEMBUATAN DAN PENGUJIAN BIOGAS

A. Dokumentasi Pembuatan Biogas

1. Kotoran kuda di masukkan ke dalam ember cat 19 liter



2. Pemotongan Limbah Sayur Kol



3. Proses blender limbah sayur kol



4. Proses pengadukan Kotoran kuda



5. Proses pengambilan pH dan suhu awal pada kotoran kuda dan sayur kol





6. proses fermentasi



B. Dokumentasi Pengujian Biogas

1. Pengujian ph





2. Pengujian Suhu



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3. Pengujian Metana

Sertifikat pengujian metana



No. Dok : Form-37.P/Sert. Uji Rev. 0
Tgl. Terbit : 24 Oktober 2018

Nomor : 06360523B/L.T.-UII/VI/2023
Number

SERTIFIKAT PENGUJIAN *Certificate of Testing*

<u>Dibuat untuk</u> <i>Certified to</i>	: Tengku Aditya Safitri
<u>Jenis>Nama Sampel</u> <i>Type/Name of sample</i>	: Gas/ Gas
<u>Asal Sampel</u> <i>Origin of sample</i>	: Universitas Islam Negeri Sumatera Utara
<u>Jumlah Sampel</u> <i>Amount of sample</i>	: 4
<u>Kode Sampel</u> <i>Sample code</i>	: 06360523/G/L.T.-UII/2023
<u>Parameter</u> <i>Parameters</i>	: CH4
<u>Tanggal Pengambilan Sampel</u> : - <i>Sample taken on</i>	
<u>Tanggal Penerimaan Sampel</u> : 06 Juni 2023 <i>Sample received on</i>	
<u>Tanggal Pengujian Sampel</u> : 23 Juni 2023 <i>Sample tested on</i>	



**LABORATORIUM TERPADU
PENGUJIAN DAN KALIBRASI
UNIVERSITAS ISLAM INDONESIA**

Bedung Lab Terpadu
Jl. Kaliurang Km 14,5 Yogyakarta
(0274)898444 ext. 4027
<http://labterpadu.uii.ac.id>
lab.terpadu@uii.ac.id

Nomor : 06360523B/LT-UII/NT/2023
Number

**HASIL PENGUJIAN
TEST RESULT**

No	Label Pelanggan	Label Lab. Terpadu	Parameter	Hasil Uji	Satuan	Metode
1	KK	06360523-1	CH ₄	54	mg/L	Kromatografi Gas
2	SK	06360523-2	CH ₄	60	mg/L	Kromatografi Gas
3	KK + SK	06360523-3	CH ₄	48	mg/L	Kromatografi Gas
4	Standard CH ₄	06360523-4	CH ₄	99.99	mg/L	Kromatografi Gas

Yogyakarta, 26 Juni 2023
Koordinator Teknis

Thorikul Huda, S. Si., M.Sc.
NIP. 052316003

Catatan : 1. Hasil pengujian ini hanya berlaku untuk sampel yang diuji
Notes: The results are available exclusively to the tested samples
2. Sertifikat ini tidak boleh diperbanyak/digandakan tanpa izin dari Manajer Teknis Laboratorium
The certificate shall not be reproduced/copied without written permission from the laboratory Technical Manager
3. Pengambilan sampel diluar tanggung jawab Laboratorium Terpadu UII
The Integrated Laboratory of UII disclaims all responsibility for the sampling

LAYANAN PRIMA : AKURAT, TEPAT WAKTU, INTEGRITAS

Halaman 2 dari 2

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**LABORATORIUM TERPADU
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UNIVERSITAS ISLAM INDONESIA**

Gedung Lab Terpadu
Jl. Kalurang Km 14,5 Yogyakarta
(0274)898444 ext. 4027
<http://labterpadu.uin.ac.id>
lab_terpadu@uin.ac.id

No. Dok : Form-37.P/Sert. Uji Rev. 0
Tgl. Terbit : 27 September 2023

Nomor : 11110823B/LTUII/IX/2023
Number

SERTIFIKAT PENGUJIAN
Certificate of Testing

Dibuat untuk <i>Certified to</i>	: Tengku Aditya Safitri
Jenis>Nama Sampel <i>Type/Name of sample</i>	: Gas (KK1); Gas (SK1); Gas (KK + SK1); Gas (KK2); Gas (SK2); Gas (KK + SK2)
Asal Sampel <i>Origin of sample</i>	: Universitas Islam Negeri Sumatera Utara
Jumlah Sampel <i>Amount of sample</i>	: 1; 1; 1; 1; 1
Kode Sampel <i>Kode Sampel</i>	: 11110823/G/LTUII/1; 11110823/G/LTUII/2; 11110823/G/LTUII/3; 11110823/G/LTUII/4; 11110823/G/LTUII/5; 11110823/G/LTUII/6
Parameter <i>Parameters</i>	: CH4; CH4; CH4; CH4; CH4; CH4
Tanggal Pengambilan Sampel <i>Sample taken on</i>	: 27 September 2023
Tanggal Penerimaan Sampel <i>Sample received on</i>	: 4 September 2023
Tanggal Pengujian Sampel <i>Sample tested on</i>	: 20 September 2023



LAYANAN PRIMA : AKURAT, TEPAT WAKTU, INTEGRITAS

Halaman 1 dari 1

SUMATERA UTARA MEDAN

a. Hari ke -3

- Kotoran kuda

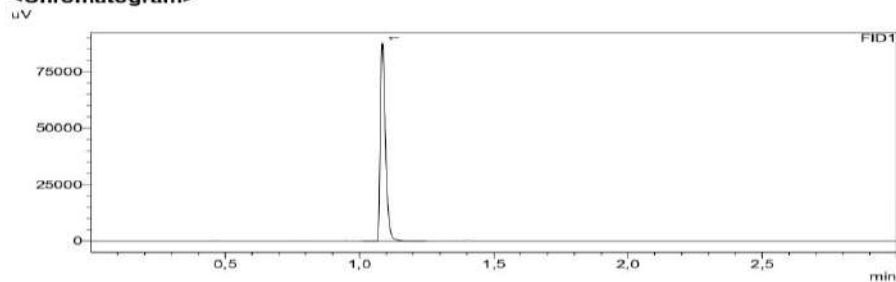


<Sample Information>

Sample Name : KK2
 Sample ID : 11110823-4
 Data Filename : 11110823-4.gcd
 Method Filename : methana.gcm
 Batch Filename :
 Vial # : 1
 Injection Volume : 200 uL
 Date Acquired : 9/20/2023 10:55:31 AM
 Date Processed : 9/20/2023 12:49:14 PM

Sample Type : Unknown
 Acquired by : System Administrator
 Processed by : System Administrator

<Chromatogram>



<Peak Table>

FID1 Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	1,083	110827	85078	0,000			
Total		110827	85078				

- Sayur Kol

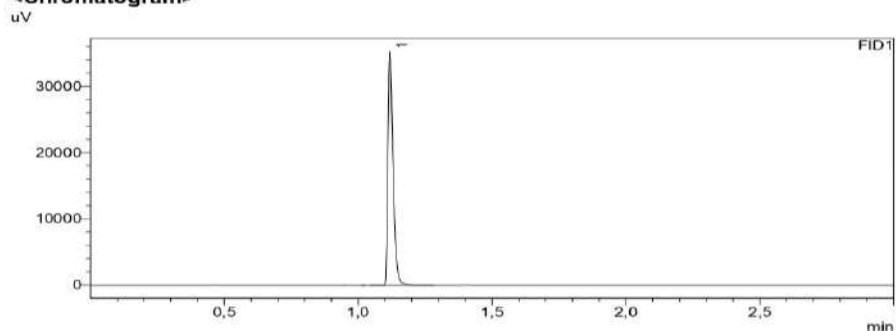


<Sample Information>

Sample Name : SK2
 Sample ID : 11110823-5
 Data Filename : 11110823-5.gcd
 Method Filename : methana.gcm
 Batch Filename :
 Vial # : 1
 Injection Volume : 200 uL
 Date Acquired : 9/20/2023 11:00:11 AM
 Date Processed : 9/20/2023 11:03:14 AM

Sample Type : Unknown
 Acquired by : System Administrator
 Processed by : System Administrator

<Chromatogram>



<Peak Table>

FID1 Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	1,134	79948	34767	0,000			
Total		79948	34767				

- Kotoran kuda + Sayur kol

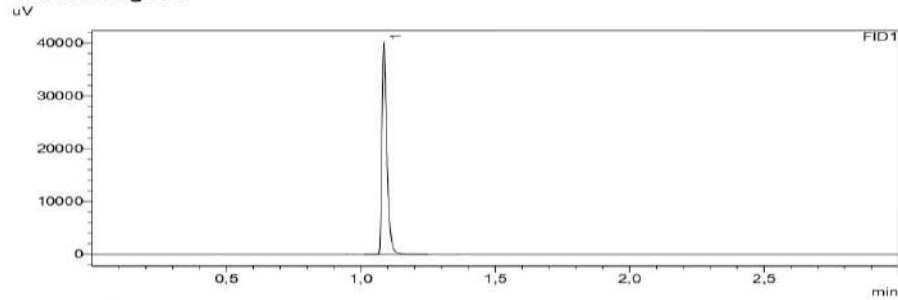
SHIMADZU LabSolutions Analysis Report

<Sample Information>

Sample Name : KK + SK2
 Sample ID : 11110823-6
 Data Filename : 11110823-6 i.gcd
 Method Filename : methana.gcm
 Batch Filename :
 Vial # : 1
 Injection Volume : 200 uL
 Date Acquired : 9/20/2023 11:11:54 AM
 Date Processed : 9/20/2023 11:14:57 AM

Sample Type : Unknown
 Acquired by : System Administrator
 Processed by : System Administrator

<Chromatogram>



<Peak Table>

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	1,086	53919	39529	0,000			
Total		53919	39529				

b. Hari ke – 12

- Kotoran kuda

23/06/2023 15:51:23 Pa

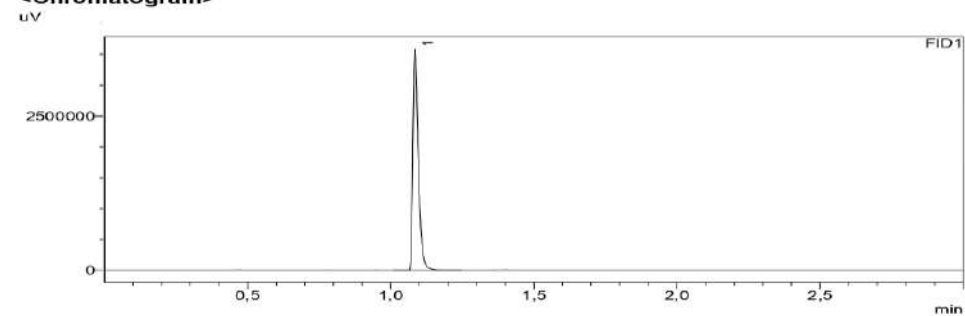
SHIMADZU LabSolutions Analysis Report

<Sample Information>

Sample Name : KK1
 Sample ID : 11110823-1
 Data Filename : 11110823-1 i.gcd
 Method Filename : methana.gcm
 Batch Filename :
 Vial # : 1
 Injection Volume : 200 uL
 Date Acquired : 9/20/2023 10:35:23 AM
 Date Processed : 9/20/2023 10:38:26 AM

Sample Type : Unknown
 Acquired by : System Administrator
 Processed by : System Administrator

<Chromatogram>



<Peak Table>

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	1,091	5989899	3589325	7	%		Methane
Total		5989899	3589325				

- Sayur kol

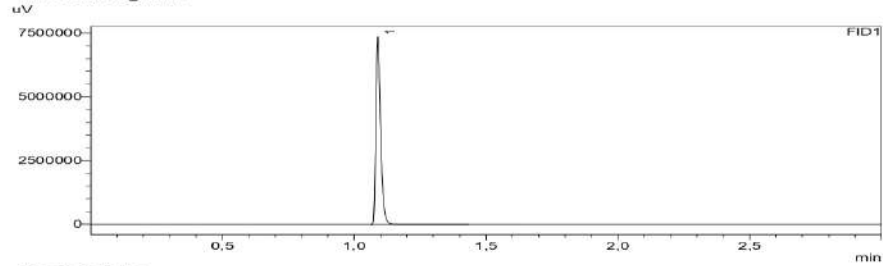
23/06/2023 15:52:30 Page 1 / 1

SHIMADZU LabSolutions Analysis Report

<Sample Information>

Sample Name : SK1
 Sample ID : 11110823-2
 Data Filename : 11110823-2.gcd
 Method Filename : methana.gcm
 Batch Filename :
 Vial # : 1
 Injection Volume : 200 uL
 Date Acquired : 9/20/2023 10:42:16 AM
 Date Processed : 9/20/2023 10:45:19 AM
 Sample Type : Unknown
 Acquired by : System Administrator
 Processed by : System Administrator

<Chromatogram>



<Peak Table>

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	1,089	9249707	7184538	10	%	S	Methane
Total		9249707	7184538				

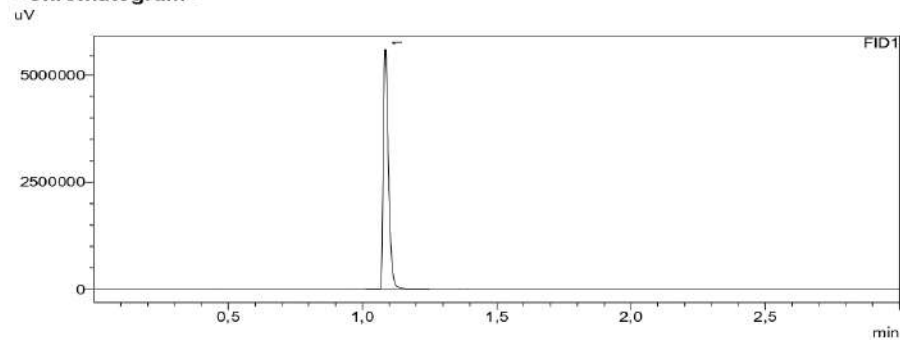
- Kotoran kuda + sayur kol

SHIMADZU LabSolutions Analysis Report

<Sample Information>

Sample Name : KK + SK1
 Sample ID : 11110823-3
 Data Filename : 11110823-3 l.gcd
 Method Filename : methana.gcm
 Batch Filename :
 Vial # : 1
 Injection Volume : 200 uL
 Date Acquired : 9/20/2023 11:18:26 AM
 Date Processed : 9/20/2023 11:21:31 AM
 Sample Type : Unknown
 Acquired by : System Administrator
 Processed by : System Administrator

<Chromatogram>



<Peak Table>

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	1,086	7988696	5854358	9	%	S	Methane
Total		7988696	5854358				

c. Hari ke 21

- Kotoran Kuda

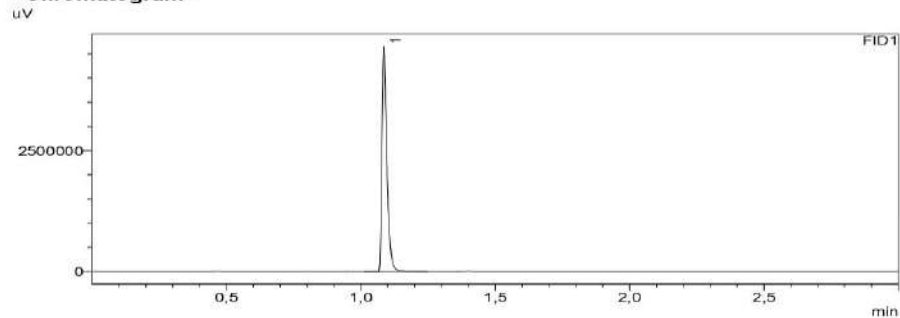


<Sample Information>

Sample Name : 06360523-1
 Sample ID : 06360523-1
 Data Filename : 06360523-1.gcd
 Method Filename : methana_06360523.gcm
 Batch Filename : 06360523.gcb
 Vial # : 1
 Injection Volume : 0,1 uL
 Date Acquired : 6/23/2023 1:46:38 PM
 Date Processed : 6/23/2023 2:56:54 PM

Sample Type : Unknown
 Acquired by : System Administrator
 Processed by : System Administrator

<Chromatogram>



<Peak Table>

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	1,091	49380670	45790990	54	%		Methane
Total		49380670	45790990				

- Sayur kol

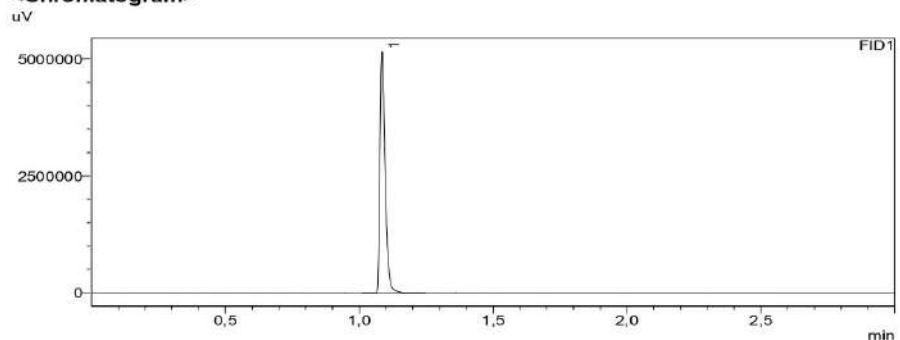


<Sample Information>

Sample Name : 06360523-2
 Sample ID : 06360523-2
 Data Filename : 06360523-2.gcd
 Method Filename : methana_06360523.gcm
 Batch Filename : 06360523.gcb
 Vial # : 1
 Injection Volume : 200 uL
 Date Acquired : 6/23/2023 1:52:16 PM
 Date Processed : 6/23/2023 2:56:54 PM

Sample Type : Unknown
 Acquired by : System Administrator
 Processed by : System Administrator

<Chromatogram>



<Peak Table>

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	1,089	55560987	51184538	60	%		Methane
Total		55560987	51184538				

- Kotoran kuda + Sayur Kol

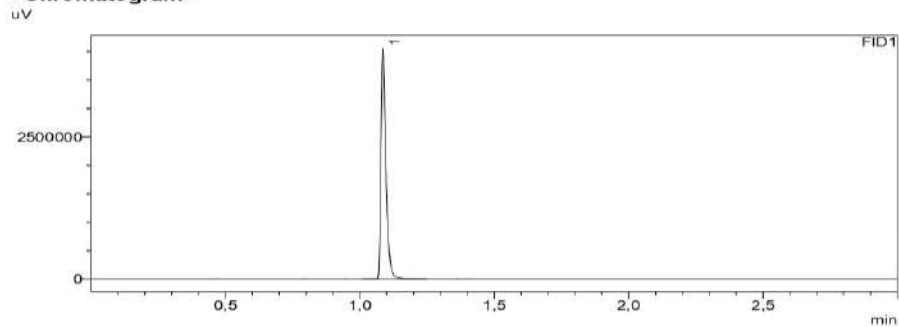
SHIMADZU LabSolutions Analysis Report

<Sample Information>

Sample Name : 06360523-3
 Sample ID : 06360523-3
 Data Filename : 06360523-3.gcd
 Method Filename : methana_06360523.gcm
 Batch Filename : 06360523.gcb
 Vial # : 1
 Injection Volume : 200 uL
 Date Acquired : 6/23/2023 1:56:39 PM
 Date Processed : 6/23/2023 2:56:55 PM

Sample Type : Unknown
 Acquired by : System Administrator
 Processed by : System Administrator

<Chromatogram>



<Peak Table>

Peak#	Ret. Time	Area	Height	Conc.	Unit	Mark	Name
1	1,086	44595355	40644393	48	%		Methane
Total		44595355	40644393				

4. Pengujian Nyala api dan warna api

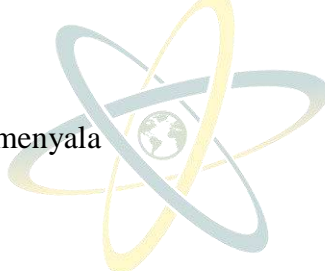
- Kotoran Kuda
 - a. Hari ke 3
Tidak ada menyala
 - b. Hari ke 12



c. Hari ke 21



- Sayur Kol
 - a. Hari ke 3
Tidak ada menyala



b. Hari ke 12



c. Hari ke 21



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- Kotoran Kuda + Sayur Kol
 - a. Hari ke 3
Tidak ada menyala
 - b. Hari ke 12



- c. Hari ke 21



Lampiran 4

**DATA HASIL PENGUJIAN PEMBUATAN BIOGAS DENGAN
KOMPOSISI KOTORAN KUDA DAN LIMBAH SAYUR KOL**

1. Pengujian pH

A. Pengujian pH Kotoran Kuda (KK)

Tabel Pengujian pH pada KK

Hari ke	Nilai pH			pH rata-rata
	06:00 WIB	12:00 WIB	18:00 WIB	
1	7,0	7,0	7,0	7
2	7,0	7,0	7,0	7
3	7,0	7,0	7,0	7
4	7,0	7,0	7,0	7
5	7,0	7,0	7,0	7
6	7,0	7,0	7,0	7
7	7,0	7,0	7,0	7
8	7,0	7,0	7,0	7
9	7,0	7,0	7,0	7
10	7,0	7,0	7,0	7
11	7,0	7,0	7,0	7
12	7,0	7,0	7,0	7
13	7,0	7,0	7,0	7
14	7,0	7,0	7,0	7
15	7,0	7,0	7,0	7
16	7,0	7,0	7,0	7
17	7,0	7,0	7,0	7
18	7,0	7,0	7,0	7
19	7,0	7,0	7,0	7
20	7,0	7,0	7,0	7
21	7,0	7,0	7,0	7

B. Pengujian pH pada Sayur Kol (SK)

Tabel Pengujian pH pada SK

Hari ke	Nilai pH			pH rata-rata
	06:00 WIB	12:00 WIB	18:00 WIB	
1	5,5	5,0	5,0	5,16
2	5,0	5,0	5,0	5
3	5,0	5,0	5,0	5
4	5,0	5,5	5,5	5,33
5	5,5	5,5	5,0	5,33
6	6,0	6,0	6,0	6
7	6,0	6,5	6,5	6,33
8	6,5	6,5	6,5	6,5
9	6,7	6,5	6,5	6,56
10	7,0	7,0	7,0	7
11	7,0	7,0	7,0	7
12	7,0	7,0	7,0	7
13	7,0	7,0	7,0	7
14	7,0	7,0	7,0	7
15	7,0	7,0	7,0	7
16	7,0	7,0	7,0	7
17	7,0	7,0	7,0	7
18	7,0	7,0	7,0	7
19	7,0	7,0	7,0	7
20	7,5	7,0	7,0	7,16
21	7,5	7,0	7,5	7,33

C. Pengujian pH pada Kotoran Kuda + Sayur Kol (KK + SK)

Tabel Pengujian pH pada KK + SK

Hari ke	Nilai pH			pH rata-rata
	06:00 WIB	12:00 WIB	18:00 WIB	
1	5,5	5,5	6,0	5,67
2	6,0	6,5	6,0	6,16
3	6,0	6,0	6,0	6
4	6,5	6,0	6,5	6,33
5	6,5	7,0	7,0	6,83
6	7,0	7,0	7,0	7
7	7,0	7,0	7,0	7
8	7,0	7,0	7,0	7
9	7,0	7,0	7,0	7
10	7,0	7,0	7,0	7
11	7,0	7,0	7,0	7
12	7,0	7,0	7,0	7
13	7,0	7,0	7,0	7
14	7,0	7,0	7,0	7
15	7,0	7,0	7,0	7
16	7,0	7,0	7,0	7
17	7,0	7,0	7,0	7
18	7,0	7,0	7,0	7
19	7,0	7,0	7,0	7
20	7,0	7,5	7,0	7,16
21	7,0	7,5	7,5	7,33

2. Pengujian Suhu

A. Pengujian Suhu pada Kotoran Kuda (KK)

Tabel Pengujian suhu pada KK

Hari ke	Nilai Suhu (°C)			Suhu rata-rata
	06:00 WIB	12:00 WIB	18:00 WIB	
1	25	29	28	27,33
2	26	28	29	27,67
3	25	28	28	27
4	26	28	28	27,33
5	25	27	28	26,67
6	26	25	25	25,33
7	25	26	27	26
8	26	27	27	26,67
9	25	27	25	25,67
10	25	28	27	26,67
11	25	28	28	27
12	25	28	28	27
13	25	28	29	27,33
14	26	29	29	28
15	25	29	29	27,67
16	26	29	29	28
17	25	28	30	27,67
18	25	29	30	28
19	26	29	30	28,33
20	26	29	32	29
21	26	29	27	27,33

B. Pengujian Suhu pada Sayur Kol (SK)

Tabel Pengujian Suhu pada SK

Hari ke	Nilai Suhu (°C)			Suhu rata-rata
	06:00 WIB	12:00 WIB	18:00 WIB	
1	25	29	28	27,33
2	26	28	29	27,67
3	25	28	28	27
4	26	28	28	27,33
5	25	27	28	26,67
6	26	25	25	25,33
7	25	27	27	26,33
8	26	27	27	26,67
9	25	27	25	25,67
10	25	29	27	27
11	26	28	28	27,33
12	25	28	28	27
13	25	28	29	27,33
14	26	29	29	28
15	25	29	29	27,67
16	26	29	29	27,67
17	25	28	29	27,33
18	26	29	30	28,33
19	26	29	30	28,33
20	27	29	31	29
21	26	29	27	27,33

C. Pengujian Suhu pada Kotoran Kuda + Sayur Kol (KK + SK)

Tabel Pengujian Suhu KK + SK

Hari ke	Nilai Suhu (°C)			Suhu rata-rata
	06:00 WIB	12:00 WIB	18:00 WIB	
1	26	29	28	27,67
2	26	28	29	27,67
3	25	28	28	27
4	25	28	27	26,67
5	25	27	28	26,67
6	25	25	25	25
7	25	27	27	26,33
8	25	27	27	26,33
9	25	27	25	25,67
10	25	29	27	27
11	25	28	28	27
12	25	28	28	27
13	25	28	29	27,33
14	26	30	29	28,33
15	25	30	29	28
16	26	30	28	28
17	25	29	29	27,67
18	25	29	30	28
19	26	30	30	28,67
20	26	30	32	29,33
21	26	29	26	27

3. Pengujian Metana

Pengujian metana pada setiap sampel

Tabel pengujian metana pada setiap sampel

Sampel	Hari Ke	Konsentrasi Metana (%)
KK	3	0
	12	7
	21	54
SK	3	0
	12	10
	21	60
KK+SK	3	0
	12	9
	21	48

Data pengujian metana dapat dihitung menggunakan rumus sebagai berikut :

$$\frac{A_{std}}{C_{std}} = \frac{A_{spl}}{C_{spl}}$$

Dimana :

C = konsentrasi (%)

A= Luas Area

Std = Standard

Spl = Sampel

a. Hari ke 3

- Sampel KK (kotoran kuda)

Dik :

$$C_{std} = 99,990\% \Rightarrow 0,9999$$

$$A_{std} = 92.037.384$$

$$A_{spl} = 157.526$$

Dit : C_{spl} ?

Penyelesaian :

$$\frac{A_{std}}{C_{std}} = \frac{A_{spl}}{C_{spl}}$$

$$A_{std} \times C_{spl} = A_{spl} \times C_{std}$$

$$C_{spl} = \frac{A_{spl} \times C_{std}}{A_{std}}$$

$$= \frac{157.526 \times 0,9999}{92.037.384}$$

$$= \frac{157.510,247}{92.037.384}$$

$$= 0,00171137$$

$$= 0,00\%$$

- Sampel SK (Sayur Kol)

Dik :

$$C_{std} = 99,990\% \Rightarrow 0,9999$$

$$A_{std} = 92.037.384$$

$$A_{spl} = 79.948$$

Dit : C_{spl} ?

Penyelesaian :

$$\frac{A_{std}}{C_{std}} = \frac{A_{spl}}{C_{spl}}$$

$$A_{std} \times C_{spl} = A_{spl} \times C_{std}$$

$$C_{spl} = \frac{A_{spl} \times C_{std}}{A_{std}}$$

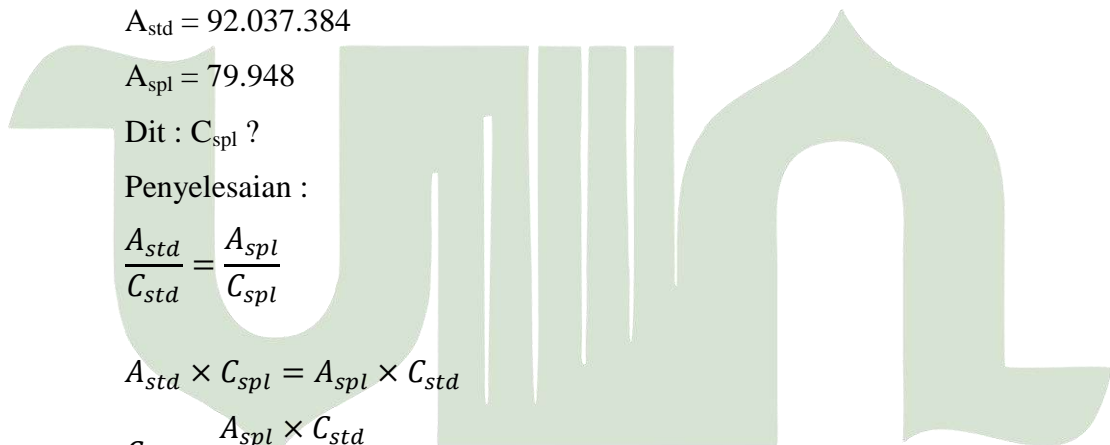
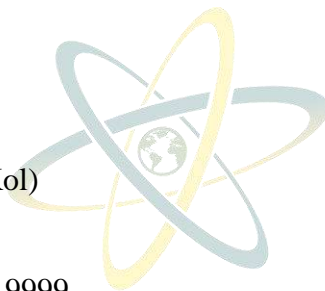
$$= \frac{79.948 \times 0,9999}{92.037.384}$$

$$= \frac{79.940,0052}{92.037.384}$$

$$= \frac{79.940,0052}{92.037.384}$$

$$= 0,00086856$$

$$= 0,00\%$$



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- Sampel KK+SK (Kotoran kuda + Sayur kol)

Dik :

$$C_{std} = 99,990\% \Rightarrow 0,9999$$

$$A_{std} = 92.037.384$$

$$A_{spl} = 53.919$$

Dit : C_{spl} ?

Penyelesaian :

$$\frac{A_{std}}{C_{std}} = \frac{A_{spl}}{C_{spl}}$$

$$A_{std} \times C_{spl} = A_{spl} \times C_{std}$$

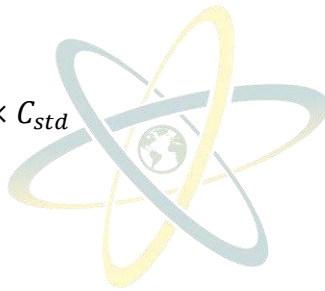
$$C_{spl} = \frac{A_{spl} \times C_{std}}{A_{std}}$$

$$= \frac{53.919 \times 0,9999}{92.037.384}$$

$$= \frac{53.913,6081}{92.037.384}$$

$$= 0,00058578$$

$$= 0,00\%$$



b. Hari ke 12

- Sampel KK (Kotoran Kuda)

Dik :

$$C_{std} = 99,990\% \Rightarrow 0,9999$$

$$A_{std} = 92.037.384$$

$$A_{spl} = 5.989.899$$

Dit : C_{spl} ?

Penyelesaian :

$$\frac{A_{std}}{C_{std}} = \frac{A_{spl}}{C_{spl}}$$

$$A_{std} \times C_{spl} = A_{spl} \times C_{std}$$

$$C_{spl} = \frac{A_{spl} \times C_{std}}{A_{std}}$$

$$\begin{aligned}
 &= \frac{5.989.899 \times 0,9999}{92.037.384} \\
 &= \frac{5.989.300,01}{92.037.384} \\
 &= 0,06507464 \\
 &= 7\%
 \end{aligned}$$

- Sampel SK (Sayur Kol)

Dik :

$$C_{std} = 99,990\% \Rightarrow 0,9999$$

$$A_{std} = 92.037.384$$

$$A_{spl} = 9.249.707$$

Dit : C_{spl} ?

Penyelesaian :

$$\frac{A_{std}}{C_{std}} = \frac{A_{spl}}{C_{spl}}$$

$$A_{std} \times C_{spl} = A_{spl} \times C_{std}$$

$$C_{spl} = \frac{A_{spl} \times C_{std}}{A_{std}}$$

$$= \frac{9.249.707 \times 0,9999}{92.037.384}$$

$$= \frac{9.248.782,03}{92.037.384}$$

$$= 0,10048941$$

$$= 10\%$$

- Sampel KK+SK (Kotoran kuda + Sayur kol)

Dik :

$$C_{std} = 99,990\% \Rightarrow 0,9999$$

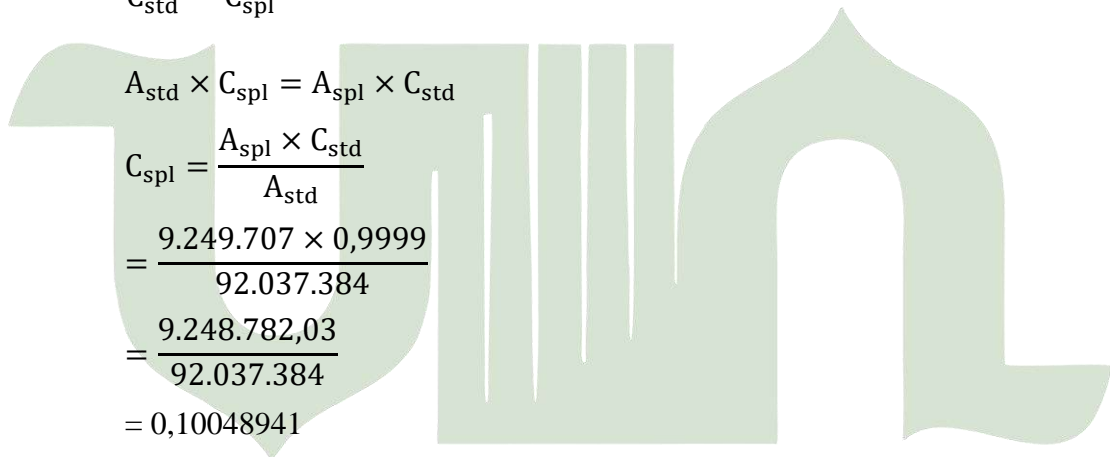
$$A_{std} = 92.037.384$$

$$A_{spl} = 7.988.696$$

Dit : C_{spl} ?

Penyelesaian :

$$\frac{A_{std}}{C_{std}} = \frac{A_{spl}}{C_{spl}}$$



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$$A_{std} \times C_{spl} = A_{spl} \times C_{std}$$

$$C_{spl} = \frac{A_{spl} \times C_{std}}{A_{std}}$$

$$= \frac{7.988.696 \times 0,9999}{92.037.384}$$

$$= \frac{7.987.897,13}{92.037.384}$$

$$= 0,0867897$$

$$= 9\%$$

c. Hari ke 21

- Sampel KK (Kotoran kuda)

Dik :

$$C_{std} = 99,990\% \Rightarrow 0,9999$$

$$A_{std} = 92.037.384$$

$$A_{spl} = 49.380.670$$

Dit : C_{spl} ?

Penyelesaian :

$$\frac{A_{std}}{C_{std}} = \frac{A_{spl}}{C_{spl}}$$

$$A_{std} \times C_{spl} = A_{spl} \times C_{std}$$

$$C_{spl} = \frac{A_{spl} \times C_{std}}{A_{std}}$$

$$= \frac{49.380.670 \times 0,9999}{92.037.384}$$

$$= \frac{49375731,93}{92.037.384}$$

$$= 0,536474743$$

$$= 54\%$$

- Sampel SK (Sayur Kol)

Dik :

$$C_{std} = 99,990\% \Rightarrow 0,9999$$

$$A_{std} = 92.037.384$$

$$A_{spl} = 55.560.987$$

Dit : C_{spl} ?

Penyelesaian :

$$\frac{A_{std}}{C_{std}} = \frac{A_{spl}}{C_{spl}}$$

$$A_{std} \times C_{spl} = A_{spl} \times C_{std}$$

$$\begin{aligned} C_{spl} &= \frac{A_{spl} \times C_{std}}{A_{std}} \\ &= \frac{55.560.987 \times 0,9999}{92.037.384} \\ &= \frac{55555430,9}{92.037.384} \\ &= 0,6036181 \\ &= 60\% \end{aligned}$$



- Sampel KK+SK (Kotoran kuda + sayur kol)

Dik :

$$C_{std} = 99,990\% \Rightarrow 0,9999$$

$$A_{std} = 92.037.384$$

$$A_{spl} = 44.595.355$$

Dit : C_{spl} ?

Penyelesaian :

$$\frac{A_{std}}{C_{std}} = \frac{A_{spl}}{C_{spl}}$$

$$A_{std} \times C_{spl} = A_{spl} \times C_{std}$$

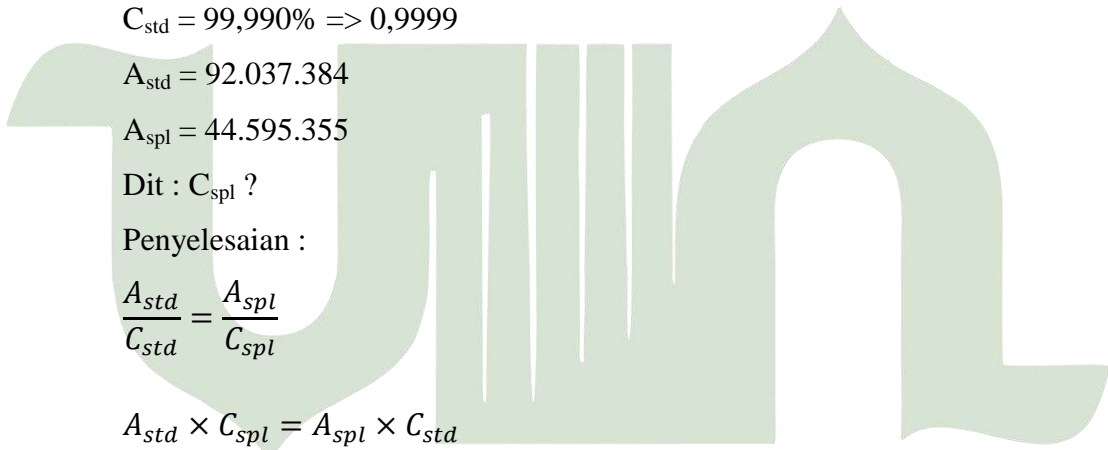
$$C_{spl} = \frac{A_{spl} \times C_{std}}{A_{std}}$$

$$= \frac{44.595.355 \times 0,9999}{92.037.384}$$

$$= \frac{44590895,46}{92.037.384}$$

$$= 0,484486776$$

$$= 48\%$$



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