

LAMPIRAN

Lampiran A. Perhitungan Kadar air, C-organik, C/N rasio dan NPK

➤ Kadar Air

$$\text{Kadar Air} = \frac{(W - W1)}{W} \times 100$$

$$\text{Variabel kontrol} = \frac{(97,08 \text{ g} - 90,63 \text{ g})}{10 \text{ g}} \times 100 = 64,5\%$$

$$\text{POP A1} = \frac{(72,95 \text{ g} - 70,15 \text{ g})}{5 \text{ g}} \times 100 = 56\%$$

$$\text{POP A2} = \frac{(72,73 \text{ g} - 71,74 \text{ g})}{5 \text{ g}} \times 100 = 19,8\%$$

$$\text{POP B1} = \frac{(74,03 \text{ g} - 70,93 \text{ g})}{5 \text{ g}} \times 100 = 62\%$$

$$\text{POP B2} = \frac{(106,51 \text{ g} - 104,23 \text{ g})}{5 \text{ g}} \times 100 = 45,6\%$$

$$\text{POP C1} = \frac{(95,85 \text{ g} - 89,72 \text{ g})}{10 \text{ g}} \times 100 = 61,3\%$$

$$\text{POP C2} = \frac{(112,57 \text{ g} - 106,08 \text{ g})}{10 \text{ g}} \times 100 = 64,9\%$$

$$\text{POP D1} = \frac{(145,25 \text{ g} - 139,41 \text{ g})}{10 \text{ g}} \times 100 = 58,4\%$$

$$\text{POP D2} = \frac{(130,97 \text{ g} - 126,24 \text{ g})}{10 \text{ g}} \times 100 = 49,2\%$$

➤ Faktor koreksi

$$\text{Faktor koreksi} = \frac{100}{100 - \text{Kadar air}}$$

$$\text{FK variabel kontrol} = \frac{100}{100 - 64,5} = 2,81$$

$$\text{FK POP A1} = \frac{100}{100 - 56} = 2,27$$

$$\text{FK POP A2} = \frac{100}{100 - 19,8} = 1,24$$

$$\text{FK POP B1} = \frac{100}{100 - 62} = 2,63$$

$$\text{FK POP B2} = \frac{100}{100 - 45,6} = 1,83$$

$$FK\ POP\ C1 = \frac{100}{100 - 61,3} = 2,58$$

$$FK\ POP\ C2 = \frac{100}{100 - 64,9} = 2,84$$

$$FK\ POP\ D1 = \frac{100}{100 - 58,4} = 2,4$$

$$FK\ POP\ D2 = \frac{100}{100 - 49,2} = 1,96$$

➤ C-organik

$$\text{Kadar C - organik} = \frac{(\text{ppm kurva} x - (\text{ml ekstrak}/1000)x100}{\text{Berat sampel} x 1000} x FK$$

$$\text{Variabel kontrol} = \frac{(545,685\ \text{ppm} - (50\ \text{ml}/1000)x100}{250\ \text{g} x 1000} x 2,81 = 30,7\%$$

$$POP\ A1 = \frac{(579,286\ \text{ppm} - (50\ \text{ml}/1000)x100}{250\ \text{g} x 1000} x 2,27 = 26,3\%$$

$$POP\ A2 = \frac{(629,305\ \text{ppm} - (50\ \text{ml}/1000)x100}{250\ \text{g} x 1000} x 1,24 = 15,6\%$$

$$POP\ B1 = \frac{(581,768\ \text{ppm} - (50\ \text{ml}/1000)x100}{250\ \text{g} x 1000} x 2,63 = 30,6\%$$

$$POP\ B2 = \frac{(621,669\ \text{ppm} - (50\ \text{ml}/1000)x100}{250\ \text{g} x 1000} x 1,83 = 22,8\%$$

$$POP\ C1 = \frac{(562,295\ \text{ppm} - (50\ \text{ml}/1000)x100}{250\ \text{g} x 1000} x 2,57 = 29,05\%$$

$$POP\ C2 = \frac{(463.402\ \text{ppm} - (50\ \text{ml}/1000)x100}{250\ \text{g} x 1000} x 2,84 = 26,4\%$$

$$POP\ D1 = \frac{(500,821\ \text{ppm} - (50\ \text{ml}/1000)x100}{250\ \text{g} x 1000} x 2,4 = 24,07\%$$

$$POP\ D2 = \frac{(468,275\ \text{ppm} - (50\ \text{ml}/1000)x100}{250\ \text{g} x 1000} x 1,96 = 18,4\%$$

➤ C/N rasio

$$C/N \text{ rasio} = \frac{C}{N}$$

$$C/N \text{ rasio variabel kontrol} = \frac{30,74}{1,05} = 29,27$$

$$C/N \text{ rasio POPA1} = \frac{26,3}{2,07} = 12,7$$

$$C/N \text{ rasio POP A2} = \frac{15,69}{1,84} = 8,52$$

$$C/N \text{ rasio POP B1} = \frac{30,61}{1,95} = 15,7$$

$$C/N \text{ rasio POP B2} = \frac{22,85}{1,63} = 14,02$$

$$C/N \text{ rasio POP C1} = \frac{29,05}{1,39} = 20,9$$

$$C/N \text{ rasio POP C2} = \frac{26,4}{1,65} = 16$$

$$C/N \text{ rasio POP D1} = \frac{24,07}{1,27} = 18,9$$

$$C/N \text{ rasio POP D2} = \frac{18,4}{1,58} = 11,6$$

➤ NPK POP

NPK = Nitrogen + Phospor + Kalium

$$NPK \text{ Variabel Kontrol} = 1,05 + 0,22 + 2,54 = 3,81\%$$

$$NPK \text{ POP A1} = 2,07 + 0,91 + 0,54 = 3,52\%$$

$$NPK \text{ POP A2} = 1,84 + 0,31 + 0,27 = 2,42\%$$

$$NPK \text{ POP B1} = 1,95 + 0,78 + 0,32 = 3,05\%$$

$$NPK \text{ POP B2} = 1,63 + 0,8 + 0,44 = 2,87\%$$

$$NPK \text{ POP C1} = 1,39 + 0,22 + 2,57 = 4,13\%$$

$$NPK \text{ POP C2} = 1,65 + 0,22 + 1,61 = 3,46\%$$

$$NPK \text{ POP D1} = 1,27 + 0,15 + 1,48 = 2,94\%$$

$$NPK \text{ POP D2} = 1,58 + 0,19 + 1,37 = 3,1\%$$

Lampiran B. Hasil analisa kadar NPK



KEMENTERIAN PERTANIAN
 BADAN PENELITIAN DAN PENGEMBANGAN PERTANIAN
 BALAI BESAR PENELITIAN DAN PENGEMBANGAN SUMBERDAYA LAHAN PERTANIAN
 BALAI PENELITIAN LINGKUNGAN PERTANIAN



LABORATORIUM BALAI PENELITIAN LINGKUNGAN PERTANIAN

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FORMULIR

F.07 LAPORAN HASIL PENGUJIAN
 RESULT OF ANALYSIS

No. Dokumen : F. 07
 Edisi/Revisi : 03/0
 Tanggal : 1 Maret 2022
 Halaman : 2 dari 2

Hasil Pengujian/Result of Analysis

Nomor/ Number	Kode Distribusi/ Distribution code	Kode Sampel/ Sample code	Hasil Pengujian/Result of Analysis			
			*pH H ₂ O	*N- Total	*P-Total	*K-Total
			%			
1	094.14.001	W (10.1)	8,38	2,07	0,91	0,54
2	094.14.002	W (10.2)	8,45	1,84	0,31	0,27
3	094.14.003	W (20.1)	7,40	1,95	0,78	0,32
4	094.14.004	W (20.2)	8,54	1,63	0,80	0,44

Metode Pengujian:

*pH H₂O : SNI 7763:2018 butir 6.4
 *N-Total : SNI 7763:2018 butir 6.6.1
 *P-total : SNI 7763:2018 butir 6.7.4.2.1
 *K-Total : SNI 7763:2018 butir 6.7.4.2.2

Pati, 6 Juli 2022
 Manajer Teknis/ Technical Manager

Fitra Hurnariyanto, A.Md.,A.K
 NIP. 19810801200604 1 001

*Ruang Lingkup Akreditasi

- Hasil Pengujian hanya berlaku untuk contoh yang diuji
The test result is only valid for the tested sample
- Hasil Pengujian berlaku untuk kelompok (Lot)
The test result is valid for the group sample

Laporan Hasil Pengujian ini dilarang diperbanyak kecuali atas persetujuan tertulis dari Manajer Puncak Laboratorium Balai Penelitian Lingkungan Pertanian
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HASIL PENGUJIAN/RESULTS OF ANALYSIS

Nomor Sertifikat/Certificate Number : 155/07/LL/22

Nama Sampel/Sample Name : Pupuk Organik Padat

Jumlah Sampel/Sample amount : 5 sampel

Kode Laboratorium	Kode Konsumen	Parameter	Hasil	Satuan	Metode
22.06.102-01	V. Kontrol	N Total	1,05	%	SNI 7763 : 2018, butir 6.6.1 (Titrimetri)
		P ₂ O ₅ Total	0,22	%	SNI 7763 : 2018, butir 6.7 (Spektrofotometri)
		K ₂ O Total	2,54	%	SNI 7763 : 2018, butir 6.7 (AAS)
22.06.102-02	C1	N Total	1,39	%	SNI 7763 : 2018, butir 6.6.1 (Titrimetri)
		P ₂ O ₅ Total	0,20	%	SNI 7763 : 2018, butir 6.7 (Spektrofotometri)
		K ₂ O Total	2,57	%	SNI 7763 : 2018, butir 6.7 (AAS)
22.06.102-03	C2	N Total	1,65	%	SNI 7763 : 2018, butir 6.6.1 (Titrimetri)
		P ₂ O ₅ Total	0,20	%	SNI 7763 : 2018, butir 6.7 (Spektrofotometri)
		K ₂ O Total	1,61	%	SNI 7763 : 2018, butir 6.7 (AAS)
22.06.102-04	D1	N Total	1,27	%	SNI 7763 : 2018, butir 6.6.1 (Titrimetri)
		P ₂ O ₅ Total	0,19	%	SNI 7763 : 2018, butir 6.7 (Spektrofotometri)
		K ₂ O Total	1,48	%	SNI 7763 : 2018, butir 6.7 (AAS)
22.06.102-05	D2	N Total	1,58	%	SNI 7763 : 2018, butir 6.6.1 (Titrimetri)
		P ₂ O ₅ Total	0,15	%	SNI 7763 : 2018, butir 6.7 (Spektrofotometri)
		K ₂ O Total	1,37	%	SNI 7763 : 2018, butir 6.7 (AAS)

Ket :

Sampel diterima lab dalam kondisi basah

Pengujian atas dasar bahan awal/berat basah

Manajer Teknis/Technical Manager


LABORATORIUM PENGUJIAN
DEPARTEMEN
AGRONOMI DAN HORTIKULTURA
FAKULTAS PERTANIAN
INSTITUT PERTANIAN BOGOR
Dr. Dwi Guntoro, SP, MSi.
NIP. 197008291997031001

Hasil Pengujian hanya berlaku bagi contoh yang diuji /Results of analysis are valid only for the analyzed samples.
Sampel diantar langsung oleh pelanggan/The samples are delivered by the customer.
Sertifikat Hasil Pengujian tidak boleh disalin sebagian atau seluruhnya tanpa seijin LP DAGH-IPB/No part of the certificate of analysis is allowed to be reproduced without permission from the analysis laboratory.
Lembar Hasil Pengujian merupakan bagian tak terpisahkan dari Sertifikat Hasil Pengujian ini/Results of analysis are included in this certificate of analysis.

Lampiran C. Alat Komposter Kayuh



Tampak Depan



Tampak Belakang



Tampak Samping



Tampak Dalam

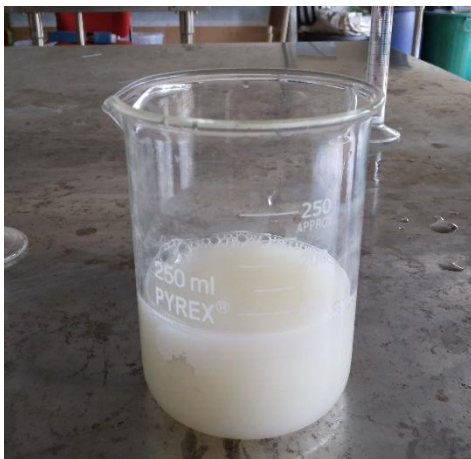
Lampiran D. Pembuatan MOL Yakult Kedaluwarsa



Yakult Kedaluwarsa



Gula, Air dan Yakult kedaluwarsa



Pencampuran bahan MOL



Fermentasi MOL

Lampiran E. Pengecekan nilai pH pada saat proses pengomposan



Nilai ph, suhu dan kelembaban pada minggu pertama media toples



Nilai ph, suhu dan kelembaban pada minggu ke-delapan media toples



Nilai ph, suhu dan kelembaban pada minggu pertama media komposter kayu



Nilai ph, suhu dan kelembaban pada minggu ke delapan media komposter kayu

Lampiran F. Suhu lingkungan

Maret ▼ 2022 ▼							HARIAN →
M	S	S	R	K	J	S	
27	28	1	2	3	4	5	
32° 24°	32° 24°	33° 25°	32° 25°	31° 24°	31° 26°	30° 25°	
6	7	8	9	10	11	12	
32° 24°	30° 24°	31° 25°	31° 25°	31° 25°	32° 24°	31° 25°	
13	14	15	16	17	18	19	
32° 25°	31° 25°	30° 24°	31° 24°	32° 24°	31° 24°	32° 25°	
20	21	22	23	24	25	26	
32° 24°	32° 26°	34° 25°	32° 24°	32° 24°	31° 25°	31° 25°	
27	28	29	30	31	1	2	

<https://www.accuweather.com/id/id/cilacap/202811/march-weather/202811?year=2022>

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April ▼ 2022 ▼							HARIAN →
M	S	S	R	K	J	S	
27	28	29	30	31	1	2	
32° 25°	32° 24°	33° 25°	32° 25°	32° 24°	32° 24°	31° 24°	
3	4	5	6	7	8	9	
32° 24°	32° 24°	31° 25°	31° 25°	30° 26°	30° 25°	30° 25°	
10	11	12	13	14	15	16	
32° 25°	32° 25°	31° 25°	32° 25°	32° 26°	32° 25°	32° 25°	
17	18	19	20	21	22	23	
32° 26°	33° 26°	31° 25°	32° 25°	29° 25°	32° 25°	32° 25°	
24	25	26	27	28	29	30	

<https://www.accuweather.com/id/id/cilacap/202811/april-weather/202811?year=2022>

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Mei 2022 ▾

HARIAN →

M	S	S	R	K	J	S
1	2	3	4	5	6	7
33° 25°	32° 25°	32° 25°	32° 25°	31° 25°	32° 25°	32° 26°
8	9	10	11	12	13	14
32° 26°	33° 26°	32° 26°	32° 26°	32° 27°	33° 27°	32° 26°
15	16	17	18	19	20	21
32° 26°	32° 27°	32° 27°	32° 26°	31° 25°	32° 25°	32° 25°
22	23	24	25	26	27	28
30° 25°	31° 25°	32° 26°	32° 25°	30° 24°	31° 24°	33° 25°
29	30	31	1	2	3	4

<https://www.accuweather.com/id/id/cilacap/202811/may-weather/202811?year=2022>

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Juni 2022 ▾

HARIAN →

M	S	S	R	K	J	S
29	30	31	1	2	3	4
33° 25°	28° 25°	31° 23°	32° 26°	30° 26°	31° 24°	31° 25°
5	6	7	8	9	10	11
31° 25°	30° 24°	31° 24°	32° 25°	32° 25°	32° 25°	31° 25°
12	13	14	15	16	17	18
31° 25°	31° 25°	31° 25°	31° 25°	30° 24°	30° 24°	31° 24°
19	20	21	22	23	24	25
30° 24°	31° 25°	31° 24°	31° 25°	31° 25°	31° 25°	30° 25°
26	27	28	29	30	1	2

<https://www.accuweather.com/id/id/cilacap/202811/june-weather/202811?year=2022>

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Lampiran G. Pengujian Kadar C-organik



Pembuatan larutan standar



Penimbangan POP



Penyaringan larutan



Pengukuran panjang gelombang

Lampiran H. Uji kadar air



Penimbangan sampel POP A1



Penimbangan sampel POP C1



Penimbangan sampel variabel kontrol



Penimbangan sampel D1



Suhu pengovenan 105⁰C



Proses pendinginan POP dalam desikator

Lampiran I. Biodata Penulis



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Motto : Jer Basuki Mawa Beya

RIWAYAT PENDIDIKAN:

1. SDN 02 MENDELEM (2006-2012)
2. SMPN 01 BELIK (2012-2015)
3. SMAN 01 BELIK (2015-2018)
4. POLITEKNIK NEGERI CILACAP (2018-2022)

Penulis telah mengikuti seminar hasil Tugas Akhir pada tanggal 8 Agustus sebagai salah satu persyaratan untuk memperoleh gelar Sarjana Terapan Teknik (S.Tr.)