

LAMPIRAN

A. Sertifikat Hasil Analisis Unsur Hara P & K - Total



LABORATORIUM PENGUJIAN / Analyses Laboratory
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FRM 7.8-15-62

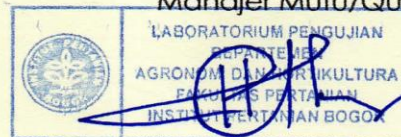
SHP No.R.006/07/LL/24

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SERTIFIKAT AMANDEMEN HASIL PENGUJIAN AMANDEMENT CERTIFICATE OF ANALYSIS

Nomor Sertifikat/Certificate Number : R.006/07/LL/24
No. Permintaan /Order Number : 277/06/LP-DAGH/24
Pelanggan/Customer : Ridho Hidayat
Alamat Pengirim/Address : Jl. Kendeng No.20, RT/RW 04/01, Kuripan,
Kesugihan, Cilacap
Tanggal Penerimaan/Date of Sample Received : 26 Juni 2024/26th June 2024
Tanggal Pelaporan/Date of Report : 15 Juli 2024/15th July 2024
Hasil Pengujian/Results of Analysis : halaman/page 2-2
Sertifikat analisis ini menggantikan sertifikat analisa No : 329/07/LL/24

Bogor, 15 Juli 2024
Manajer Mutu/Quality Manager



Prof. Dr. Ir. Herdhata Agusta
NIP. 195908131983031003

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.



HASIL PENGUJIAN/RESULTS OF ANALYSIS

Nomor Sertifikat/Certificate Number : R.006/07/LL/23

Nama Sampel/Sample Name : Pupuk Organik Padat

Jumlah Sampel/Sample amount : 4 sampel

Kode Laboratorium	Kode Konsumen	Parameter	Hasil	Satuan	Metode
24.06.277-01	Sampel 1 PG1 (Jerami Domba) 70:30	P ₂ O ₅ Total	0,60	%	SNI 7763 : 2018, butir 6.7 (Spektrofotometri)
		K ₂ O Total	2,60	%	SNI 7763 : 2018, butir 6.7 (AAS)
24.06.277-02	Sampel 2 PG2 (Domba Jerami) 70:30	P ₂ O ₅ Total	1,16	%	SNI 7763 : 2018, butir 6.7 (Spektrofotometri)
		K ₂ O Total	3,17	%	SNI 7763 : 2018, butir 6.7 (AAS)
24.06.277-03	Sampel 3 PG3 (Domba) 100%	P ₂ O ₅ Total	1,39	%	SNI 7763 : 2018, butir 6.7 (Spektrofotometri)
		K ₂ O Total	2,97	%	SNI 7763 : 2018, butir 6.7 (AAS)
24.06.277-04	Sampel 4 PG4 (Jerami) 100%	P ₂ O ₅ Total	0,27	%	SNI 7763 : 2018, butir 6.7 (Spektrofotometri)
		K ₂ O Total	1,94	%	SNI 7763 : 2018, butir 6.7 (AAS)

Ket :

Sampel diterima di laboratorium dalam kondisi granul kering
Pengujian atas dasar berat kering, kecuali kadar air

Manajer Teknis/Technical Manager



Prof. Dr. Dwi Gunibro, SP, MSi
NIP. 197008291997031001

B. Perhitungan

1. Kadar Air

$$\text{Rumus} = \frac{w_1 - w_2}{w_1} \times 100\%$$

Keterangan:

w_1 : Bobot contoh, g.

w_2 : (Kurs kosong – Kurs isi setelah dikeringkan), g.

$$\begin{aligned} \text{PG1} &= \frac{11.0205 - (51.9185 - 42.3028)}{11.0205} \times 100\% \\ &= \frac{11.0205 - 9.6157}{11.0205} \times 100\% \\ &= \frac{1.4048}{11.0205} \times 100\% \\ &= 12.74\% \end{aligned}$$

$$\begin{aligned} \text{PG2} &= \frac{11.0733 - (47.3867 - 37.7804)}{11.0733} \times 100\% \\ &= \frac{11.0733 - 9.6003}{11.0733} \times 100\% \\ &= \frac{1.473}{11.0733} \times 100\% \\ &= 13.30\% \end{aligned}$$

$$\begin{aligned} \text{PG3} &= \frac{11.0654 - (49.5055 - 39.9382)}{11.0654} \times 100\% \\ &= \frac{11.0654 - 9.5673}{11.0654} \times 100\% \\ &= \frac{1.4981}{11.0654} \times 100\% \\ &= 13.53\% \end{aligned}$$

$$\begin{aligned} \text{PG4} &= \frac{11.0151 - (51.2804 - 41.7262)}{11.0151} \times 100\% \\ &= \frac{11.0151 - 9.5542}{11.0151} \times 100\% \\ &= \frac{1.4609}{11.0151} \times 100\% \\ &= 13.26\% \end{aligned}$$

2. C-Organik

$$\text{Rumus} = \frac{(W1-W2)}{1} \times Fk \times 100\%$$

Keterangan:

W : Berat sampel dalam gram.

W2 : Berat abu dalam gram.

Fk : Faktor koreksi kadar air.

0,58 : Faktor koreksi bahan organik ke C-Organik.

$$\begin{aligned} \text{PG1} &= \frac{(45,7363-42,3028)}{11,0205} \times \frac{100}{100-12,74\%} \times 100 \\ &= \frac{3,4335}{11,0205} \times \frac{100}{87,26} \times 100 \\ &= 0,3115 \times 1,1460 \times 100 \\ &= 35,70\% \end{aligned}$$

$$\begin{aligned} \text{Kadar C-Organik} &: 35,70\% \times 0,58 \\ &= 20,70\% \end{aligned}$$

$$\begin{aligned} \text{PG2} &= \frac{(41,3219-37,7804)}{11,0733} \times \frac{100}{100-12,74\%} \times 100 \\ &= \frac{3,5415}{11,0733} \times \frac{100}{86,7} \times 100 \\ &= 0,319 \times 1,1534 \times 100 \\ &= 36,88\% \end{aligned}$$

$$\begin{aligned} \text{Kadar C-Organik} &: 36,88\% \times 0,58 \\ &= 21,39\% \end{aligned}$$

$$\begin{aligned} \text{PG3} &= \frac{(44,8391-39,9382)}{11,0654} \times \frac{100}{100-13,26\%} \times 100 \\ &= \frac{4,9009}{11,0654} \times \frac{100}{86,47} \times 100 \\ &= 0,4429 \times 1,1564 \times 100 \\ &= 51,21\% \end{aligned}$$

$$\begin{aligned} \text{Kadar C-Organik} &: 51,21\% \times 0,58 \\ &= 29,70\% \end{aligned}$$

$$\begin{aligned} \text{PG4} &= \frac{(44.3225-41.7262)}{11.0151} \times \frac{100}{100-13.26\%} \times 100 \\ &= \frac{2.5963}{11.0151} \times \frac{100}{86.74} \times 100 \\ &= 0.2357 \times 1.1528 \times 100 \\ &= 27.17\% \\ \text{Kadar C-Organik} &: 27.17\% \times 0.58 \\ &= 15.75\% \end{aligned}$$

3. Nitrogen

$$\text{Kadar Nitrogen (\%)} = \frac{(v_1-v_2) \times N \times 14.008}{W} \times 100\% \times \text{FK}$$

Keterangan :

V1 : Volum larutan H₂SO₄ digunakan untuk titrasi.

V2 : Volum larutan H₂SO₄ (blanko : 0.7).

N : Normalitas larutan H₂SO₄.

14.008 : Bobot atom nitrogen.

FK : Faktor koreksi kadar air.

W : Berat contoh.

$$\begin{aligned} \text{PG1} &= \frac{(10.3-0.7) \times 0.05 \times 14.008}{502.7} \times 100\% \times \frac{100}{(100-12.93)} \\ &= \frac{9.6 \times 0.05 \times 14.008}{502.7} \times 100\% \times \frac{100}{87.07} \\ &= 0.0133 \times 100\% \times 1.1485 \\ &= 1.53\% \\ \text{PG2} &= \frac{(2.4-0.7) \times 0.05 \times 14.008}{501.2} \times 100\% \times \frac{100}{(100-13.31)} \\ &= \frac{1.7 \times 0.05 \times 14.008}{502.9} \times 100\% \times \frac{100}{86.69} \\ &= 0.2367 \times 100\% \times 1.1533 \\ &= 2.73\% \\ \text{PG3} &= \frac{(1.5-0.7) \times 0.05 \times 14.008}{502.2} \times 100\% \times \frac{100}{(100-13.53)} \\ &= \frac{0.8 \times 0.05 \times 14.008}{502.2} \times 100\% \times \frac{100}{86.47} \end{aligned}$$

$$0.09 \times 100\% \times 1.1564$$

$$1.29\%$$

$$\blacksquare \text{ PG4} = \frac{(1.6-0.7) \times 0.05 \times 14.008}{501.2} \times 100\% \times \frac{100}{(100-13.26)}$$

$$\frac{0.9 \times 0.05 \times 14.008}{501.2} \times 100\% \times \frac{100}{86.74}$$

$$0.10 \times 100\% \times 1.1528$$

$$1.44\%$$

4. C/N rasio

$$\text{Rumus} = \frac{\% \text{ C-Organik}}{\% \text{ Nitrogen}}$$

% C-organik : Hasil dari nilai kadar C-Organik.

% Nitrogen : Hasil dari nilai kadar nitrogen.

$$\blacksquare \text{ PG1} = \frac{20.70}{1.53} = 12.62$$

$$\blacksquare \text{ PG2} = \frac{21.39}{2.73} = 7.8$$

$$\blacksquare \text{ PG3} = \frac{29.70}{1.29} = 23.02$$

$$\blacksquare \text{ PG4} = \frac{15.75}{1.44} = 10.93$$

C. Gambar



Sampel Limbah Jerami



Sampel Feses Domba



Pencacahan Jerami Padi



Pengomposan



Proses Granulasi



Ukuran Pupuk Granul 2-6 mm



Sampel PG1 Jerami Padi 70% : Feses domba 30%



Sampel PG2 Jerami Padi 30% : Feses domba 70%



Sampel PG3 Feses Domba 100%



Sampel PG4 Jerami Padi 100%



Analisis Kadar Air



Analisis C-Organik



Sampel di Kjeldahl



Destilasi Sampel



Titrasi Sampel



Shaker Sampel



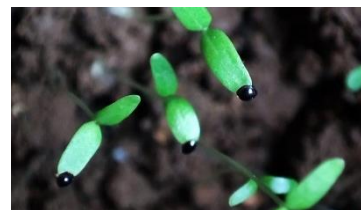
Analisis pH Sampel



Media Tanam



Biji Bayam Cabut



Bayam Cabut 1 Minggu



Sampel PG1



Sampel PG2



Sampel PG3



Sampel PG4



Sampel Kontrol

Biodata Penulis



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Riwayat Pendidikan

1. SD Negeri Kuripan 03
2. SMP Ya Bakii 2 Kesugihan
3. SMK Migas Muhammadiyah Cilacap
4. Politeknik Negeri Cilacap