

Lampiran 4. Perhitungan Kadar Serat

- **Larutan H₂SO₄ 1,25 % dari 97 %**

$$M_1 \times V_1 = M_2 \times V_2$$

$$97 \% \times V_1 = 1,25 \% \times 100 \text{ mL}$$

$$V_1 = 1,28 \text{ mL}$$

- **Larutan NaOH 3,25 %**

$$\% = 3,25 \%$$

$$V = 100 \text{ mL}$$

$$\% (b/v) = \frac{b}{v} \times 100 \%$$

$$3,25\% = \frac{b}{100 \text{ mL} \times 100 \%}$$

$$b = 3,35$$

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➤ **Perhitungan Kadar Serat**

$$\% \text{ Serat Kasar} = \frac{\text{Residu}}{\text{sampel}} \times 100 \%$$

$$\% \text{ Serat Kasar} = \frac{(\text{berat residu} + \text{berat kertas}) - (\text{berat kertas})}{\text{sampel}} \times 100 \%$$

Perlakuan	Berat Kertas (g)	Kertas Saring + Residu (g)	Berat Sampel (g)
Tanpa Perlakuan	0,645	0,788	1,007
	0,644	0,78	1,006
Fermentasi 24 Jam	0,656	0,781	1,005
	0,645	0,774	1,004
Fermentasi 36 Jam	0,646	0,762	1,005
	0,66	0,776	1,006
Fermentasi 48 Jam	0,649	0,753	1,007
	0,648	0,754	1,006

a. Tanpa Perlakuan

Berat Sampel = 1,007 gram

Berat Kertas Saring = 0,645 gram

Berat Kertas Saring + Residu = 0,788 gram

$$\begin{aligned} \% \text{ Serat Kasar} &= \frac{0,788 - 0,645}{1,007} \times 100 \% \\ &= 14,75 \% \end{aligned}$$

Berat Sampel = 1,006 gram

Berat Kertas Saring = 0,644 gram

Berat Kertas Saring + Residu = 0,780 gram

$$\begin{aligned} \% \text{ Serat Kasar} &= \frac{0,780 - 0,644}{1,006} \times 100 \% \\ &= 13,52 \% \end{aligned}$$

$$\text{Rata-rata} = \frac{14,75 + 13,52}{2} \times 100 \%$$

$$=14,13 \%$$

b. Fermentasi 24 Jam

Berat Sampel = 1,005 gram

Berat Kertas Saring = 0,656 gram

Berat Kertas Saring + Residu = 0,781 gram

$$\% \text{ Serat Kasar} = \frac{0,781 - 0,656}{1,005} \times 100 \%$$

$$= 12,43 \%$$

Berat Sampel = 1,004 gram

Berat Kertas Saring = 0,645 gram

Berat Kertas Saring + Residu = 0,774 gram

$$\% \text{ Serat Kasar} = \frac{0,774 - 0,645}{1,004} \times 100 \%$$

$$= 12,84 \%$$

$$\text{Rata-rata} = \frac{12,43 + 12,84}{2} \times 100 \%$$

$$= 12,63 \%$$

c. Fermentasi 36 Jam

Berat Sampel = 1,004 gram

Berat Kertas Saring = 0,646 gram

Berat Kertas Saring + Residu = 0,762 gram

$$\% \text{ Serat Kasar} = \frac{0,762 - 0,646}{1,004} \times 100 \%$$

$$= 11,55 \%$$

Berat Sampel = 1,004 gram

Berat Kertas Saring = 0,660 gram

Berat Kertas Saring + Residu = 0,782 gram

$$\begin{aligned}\% \text{ Serat Kasar} &= \frac{0,782-0,660}{1,004} \times 100 \% \\ &= 12,15 \%\end{aligned}$$

$$\begin{aligned}\text{Rata-rata} &= \frac{11,55 + 12,15}{2} \times 100 \% \\ &= 11,85 \%\end{aligned}$$

d. Fermentasi 48 Jam

Berat Sampel = 1,007 gram

Berat Kertas Saring = 0,649 gram

Berat Kertas Saring + Residu = 0,753 gram

$$\begin{aligned}\% \text{ Serat Kasar} &= \frac{0,753-0,649}{1,007} \times 100 \% \\ &= 10,32 \%\end{aligned}$$

Berat Sampel = 1,006 gram

Berat Kertas Saring = 0,648 gram

Berat Kertas Saring + Residu = 0,754 gram

$$\begin{aligned}\% \text{ Serat Kasar} &= \frac{0,754-0,648}{1,006} \times 100 \% \\ &= 10,53 \%\end{aligned}$$

$$\text{Rata-rata} = \frac{10,32 + 10,53}{2} \times 100 \%$$

=10,42 %

➤ **Hasil Perhitungan Kadar Serat**

Perlakuan	% Serat	Rata-rata % Serat
Tanpa Perlakuan	14,75	14,13
	13,52	
Fermentasi 24 Jam	12,44	12,64
	12,85	
Fermentasi 36 Jam	11,54	11,54
	11,53	
Fermentasi 48 Jam	10,33	10,43
	10,54	

