

LAMPIRAN 1
DATA PENGAMATAN

1. Data Hasil Analisa Bahan Baku

Tabel 9. Data Hasil Analisa Bahan Baku Biobriket Pelepah Kelapa Bagian Pangkal

Sampel	Kadar Air (%)	Kadar Abu (%)	Kadar Zat Terbang (%)	Kadar Karbon Tetap (%)	Nilai Kalor (kal/g)
Pelepah Kelapa	0,67	10	36,94	52,39	5.621

2. Data Hasil Analisa Karakteristik Produk Biobriket Pelepah Kelapa

Tabel 10. Data Hasil Analisa Kadar Air

Komposisi Perekat Banding Briket (Basis 10 gram)	Kadar Air (%)
(10:90)	1,08
(20:80)	1,29
(30:70)	2,40
(40:60)	2,69

Tabel 11. Data Hasil Analisa Kadar Abu

Komposisi Perekat Banding Briket (Basis 10 gram)	Kadar Abu (%)
(10:90)	9,25
(20:80)	7,96
(30:70)	7,78
(40:60)	6,73

Tabel 12. Data Hasil Analisa Kadar Zat Terbang

Komposisi Perekat Banding Briket (Basis 10 gram)	Kadar Zat Terbang (%)
(10:90)	35,24
(20:80)	35,88
(30:70)	37,83
(40:60)	40,23

Tabel 13. Data Hasil Analisa Kadar Karbon Tetap

Komposisi Perekat Banding Briket (Basis 10 gram)	Kadar Karbon Tetap (%)
(10:90)	54,43
(20:80)	54,87
(30:70)	51,99
(40:60)	50,35

Tabel 14. Data Hasil Analisa Nilai Kalor

Komposisi Perekat Banding Briket (Basis 10 gram)	Nilai Kalor (Kal/g)
(10:90)	5.286
(20:80)	5.433
(30:70)	5.336
(40:60)	5.063

LAMPIRAN 2 PERHITUNGAN

I. PENENTUAN KADAR AIR BIOBRIKET

Analisa dilakukan untuk setiap sampel. Rumus yang digunakan dalam menghitung kadar air yaitu :

$$\% \text{ Kadar Air (IM)} = \left(\frac{W_3}{W_2} \right) \times 100\%$$

Keterangan :

Berat sampel + cawan + tutup (gr) = W1

Berat sampel+ cawan + tutup setelah dikeringkan (gr) = W2

Selisih berat (gr) = W3 = W1-W2

1. Bahan Baku Pelepah Kelapa ukuran 60 Mesh

W1 = 48,0067 gr

W2 = 47,6868 gr

W3 = (48,0067 – 47,6868) gr = 0,3199 gr

% kadar air (IM) = $\left(\frac{W_3}{W_2} \right) \times 100\% = \frac{0,3199 \text{ gr}}{47,6868 \text{ gr}} \times 100\% = \mathbf{0,67\%}$

2. Sampel Biobriket Perbandingan (10:90) ukuran 60 Mesh

W1 = 41,9123 gr

W2 = 41,4640 gr

W3 = (41,9123 – 41,4640) gr = 0,4483 gr

% kadar air (IM) = $\left(\frac{W_3}{W_2} \right) \times 100\% = \frac{0,4483 \text{ gr}}{41,4640 \text{ gr}} \times 100\% = \mathbf{1,08\%}$

3. Sampel Biobriket Perbandingan (20:80) ukuran 60 Mesh

W1 = 35,2991 gr

W2 = 34,8479 gr

W3 = (35,2991 – 34,8479) gr = 0,4512 gr

% kadar air (IM) = $\left(\frac{W_3}{W_2} \right) \times 100\% = \frac{0,4512 \text{ gr}}{34,8479 \text{ gr}} \times 100\% = \mathbf{1,29\%}$

4. Sampel Biobriket Perbandingan (30:70) ukuran 60 Mesh

$$W1 = 32,7644 \text{ gr}$$

$$W2 = 31,9942 \text{ gr}$$

$$W3 = (32,7644 - 31,9942) \text{ gr} = 0,7702 \text{ gr}$$

$$\% \text{ kadar air (IM)} = \left(\frac{W3}{W2} \right) \times 100\% = \frac{0,7702 \text{ gr}}{31,9942 \text{ gr}} \times 100\% = \mathbf{2,40 \%}$$

5. Sampel Biobriket Perbandingan (40:60) ukuran 60 Mesh

$$W1 = 41,9115 \text{ gr}$$

$$W2 = 40,8124 \text{ gr}$$

$$W3 = (41,9115 - 40,8124) \text{ gr} = 1,0991 \text{ gr}$$

$$\% \text{ kadar air (IM)} = \left(\frac{W3}{W2} \right) \times 100\% = \frac{1,0991 \text{ gr}}{40,8124 \text{ gr}} \times 100\% = \mathbf{2,69 \%}$$

II. PENENTUAN KADAR ABU BIOBRIKET

Analisa dilakukan untuk setiap sampel. Rumus yang digunakan dalam menghitung kadar abu yaitu :

$$\% \text{ Kadar Abu (AC)} = \frac{m_3 - m_1}{m_2 - m_1} \times 100$$

Keterangan :

AC = (*Ash Content*) kadar abu.....(%)

m₁ = berat cawan(gr)

m₂ = berat cawan + sampel.....(gr)

m₃ = berat cawan + residu(gr)

1. Bahan Baku Pelepah Kelapa ukuran 60 Mesh

$$m_1 = 22,8779 \text{ gr}$$

$$m_2 = 25,8815 \text{ gr}$$

$$m_3 = 23,1785 \text{ gr}$$

$$\% \text{ Kadar Abu (AC)} = \frac{m_3 - m_1}{m_2 - m_1} \times 100 = \frac{(23,1785 - 22,8779) \text{ gr}}{(25,8815 - 22,8779) \text{ gr}} \times 100\% = \mathbf{10\%}$$

2. Sampel Biobriket Perbandingan (10:90) ukuran 60 Mesh

$$m_1 = 21,9302 \text{ gr}$$

$$m_2 = 24,9327 \text{ gr}$$

$$m_3 = 22,2080 \text{ gr}$$

$$\% \text{ Kadar Abu (AC)} = \frac{m_3 - m_1}{m_2 - m_1} \times 100 = \frac{(22,2080 - 21,9302) \text{ gr}}{(24,9327 - 21,9302) \text{ gr}} \times 100 \% = \mathbf{9,25 \%}$$

3. Sampel Biobriket Perbandingan (20:80) ukuran 60 Mesh

$$m_1 = 21,8609 \text{ gr}$$

$$m_2 = 24,8644 \text{ gr}$$

$$m_3 = 22,1001 \text{ gr}$$

$$\% \text{ Kadar Abu (AC)} = \frac{m_3 - m_1}{m_2 - m_1} \times 100 = \frac{(22,1001 - 21,8609) \text{ gr}}{(24,8644 - 21,8609) \text{ gr}} \times 100 \% = \mathbf{7,96 \%}$$

4. Sampel Biobriket Perbandingan (30:70) ukuran 60 Mesh

$$m_1 = 27,7670 \text{ gr}$$

$$m_2 = 30,7715 \text{ gr}$$

$$m_3 = 28,0010 \text{ gr}$$

$$\% \text{ Kadar Abu (AC)} = \frac{m_3 - m_1}{m_2 - m_1} \times 100 = \frac{(28,0010 - 27,7670) \text{ gr}}{(30,7715 - 27,7670) \text{ gr}} \times 100 \% = \mathbf{7,78 \%}$$

5. Sampel Biobriket Perbandingan (40:60) ukuran 60 Mesh

$$m_1 = 13,9054 \text{ gr}$$

$$m_2 = 16,9128 \text{ gr}$$

$$m_3 = 14,1078 \text{ gr}$$

$$\% \text{ Kadar Abu (AC)} = \frac{m_3 - m_1}{m_2 - m_1} \times 100 = \frac{(14,1078 - 13,9054) \text{ gr}}{(16,9128 - 13,9054) \text{ gr}} \times 100 \% = \mathbf{6,73 \%}$$

III. PENENTUAN KADAR KARBON TETAP BIOBRIKET

Analisa dilakukan untuk setiap sampel. Rumus yang digunakan dalam menghitung kadar karbon tetap yaitu :

$$FC = 100\% - (IM + AC + VM)$$

Keterangan :

FC = kadar karbon padat

IM = kadar air lembab

AC = kadar abu

VM = kadar zat terbang

1. Bahan Baku Pelepah Kelapa ukuran 60 Mesh

IM = 0,67 %

AC = 10 %

VM= 36,94 %

% FC = 100% - (IM + AC + VM) = 100%-(0,67+10+36,94)% = **52,39 %**

2. Sampel Biobriket Perbandingan (10:90) ukuran 60 Mesh

IM = 1,08 %

AC = 9,25 %

VM= 35,24 %

% FC = 100% - (IM + AC + VM) = 100%-(1,08+9,25+35,24)% = **54,43 %**

3. Sampel Biobriket Perbandingan (20:80) ukuran 60 Mesh

IM = 1,29 %

AC = 7,96 %

VM= 35,88 %

% FC = 100% - (IM + AC + VM) = 100%-(1,29+7,96+35,88)% = **54,87 %**

4. Sampel Biobriket Perbandingan (30:70) ukuran 60 Mesh

IM = 2,4 %

AC = 7,78 %

VM= 37,83 %

% FC = 100% - (IM + AC + VM) = 100%-(2,4+7,78+37,83)% = **51,99 %**

5. Sampel Biobriket Perbandingan (40:60) ukuran 60 Mesh

$$\text{IM} = 2,69 \%$$

$$\text{AC} = 6,73 \%$$

$$\text{VM} = 40,23 \%$$

$$\% \text{ FC} = 100\% - (\text{IM} + \text{AC} + \text{VM}) = 100\% - (2,69 + 6,73 + 40,23)\% = \mathbf{50,35 \%}$$

LAMPIRAN 3
GAMBAR-GAMBAR

I. BAHAN BAKU



Gambar 21. Pelepah Kelapa



Gambar 22. Potongan Pelepah Kelapa

II. PROSES KARBONISASI



Gambar 23. Proses Karbonisasi



Gambar 24. Furnance

III. ARANG



Gambar 25. Arang Pelepah Kelapa



Gambar 26. Proses Penghalusan Arang



Gambar 27. Alat *Crusher*



Gambar 28. Arang yang telah halus



Gambar 29. Alat Ayakan *Sieve Shaker*



Gambar 30. Proses Pengayakan Arang

IV. PEMBUATAN PEREKAT



Gambar 31. Daun Kembang Sepatu



Gambar 32. Blender



Gambar 33. Proses Pemplenderan



Gambar 34. Perekat Daun Kembang Sepatu

V. PEMBUATAN BIOBRIKET



Gambar 35. Menimbang Bahan Briket



Gambar 36. Pencampuran Briket & Perekat



Gambar 37. Cetakan Biobriket



Gambar 38. Alat Pencetak Briket



Gambar 39. Proses Pencetakan Biobriket



Gambar 40. Biobriket Pelempah Kelapa

VI. PERALATAN ANALISA PRODUK BIOBRIKET



Gambar 41. Oven Analisa Kadar Air



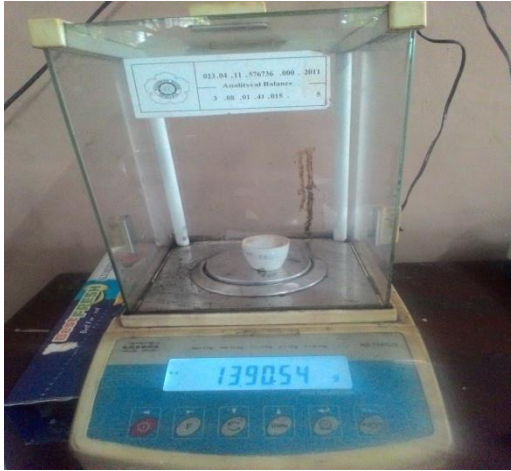
Gambar 42. Oven Analisa Kadar Abu



Gambar 43. Oven Analisa Kadar Zat Terbang



Gambar 44. Bomb Kalorimeter



Gambar 45. Neraca Analitik



Gambar 46. Desikator