

LAMPIRAN A
DATA PENGAMATAN

Tabel 1. Data Hasil Analisa Bahan Baku

Bahan Baku	Karakteristik	Hasil Analisa
<i>Crude Palm Oil</i>	Kadar FFA	6,65 %
	Densitas	0,8887 gr/ml
	Viskositas	35,0256 cSt
CaO	Kadar CaO	65 %
	pH	11

Tabel 2. Data Hasil Analisa Produk Biodiesel

Massa NaOH (gr)	Massa CaO (gr)	Volume Hasil (ml)	Densitas (gr/ml)	Viskositas (Cst)	Titik Nyala	Indeks Bias	Angka Asam (mg KOH/gr)	Kadar Air (%)
0,2	0,5	376	0.8788	5.9217	125.4	1.44911	0.4315	4.4711
	1	388	0.8768	5.8161	132.6	1.44931	0.4234	3.4872
	1,5	385	0.8715	5.6572	138.9	1.44861	0.4234	3.1233
0,6	0,5	394	0.8687	5.5284	162.5	1.44831	0.3435	3.3092
	1	391	0.8675	5.4644	157.6	1.44711	0.3366	3.1107
	1,5	389	0.8645	5.3444	144.8	1.44701	0.3506	2.8189
1	0,5	365	0.8657	5.4454	144.2	1.44733	0.4400	3.0204
	1	358	0.8650	5.6548	139.8	1.44803	0.5292	2.5588
	1,5	347	0.8656	5.7690	121.5	1.44813	0.5394	2.5148

Tabel 3. Data Analisis Densitas

Massa NaOH (gr)	Massa CaO (gr)	Berat Piknometer (gr)	Berat Piknometer+air (gr)	Berat Piknometer+Metil Ester (gr)	Berat Metil Ester (gr)	Densitas (gr/ml)
0.2	0.5	60.2817	160.4	148.7099	88.4282	0.8788
	1	60.2817	160.4	148.5068	88.2251	0.8768
	1.5	60.2817	160.4	147.9739	87.6922	0.8715
0.6	0.5	60.2817	160.4	147.6907	87.4090	0.8687
	1	60.2817	160.4	147.5697	87.2880	0.8675
	1.5	60.2817	160.4	147.2707	86.9890	0.8645
1	0.5	60.2817	160.4	147.3874	87.1057	0.8657
	1	60.2817	160.4	147.3213	87.0396	0.8650
	1.5	60.2817	160.4	147.3764	87.0947	0.8656

Tabel 4. Data Analisis Viskositas

Massa NaOH (gr)	Massa CaO (gr)	K	Densitas Bola (gr/ml)	Densitas Metil Ester (gr/ml)	Waktu Bola Jatuh		Viskositas Dinamik (Cp)	Viskositas Kinematik (Cst)
					Sekon	Menit		
0.2	0.5	3.3	8.02	0.8788	13.25	0.2208	5.2041	5.9217
	1	3.3	8.02	0.8768	12.98	0.2163	5.0995	5.8161
	1.5	3.3	8.02	0.8715	12.54	0.2090	4.9303	5.6572
0.6	0.5	3.3	8.02	0.8687	12.21	0.2035	4.8025	5.5284
	1	3.3	8.02	0.8675	12.05	0.2008	4.7403	5.4644
	1.5	3.3	8.02	0.8645	11.74	0.1957	4.6203	5.3444
1	0.5	3.3	8.02	0.8657	11.98	0.1997	4.7140	5.4454
	1	3.3	8.02	0.8650	12.43	0.2072	4.8915	5.6548
	1.5	3.3	8.02	0.8656	12.69	0.2115	4.9934	5.7690

Tabel 5. Data Analisis Angka Asam

Massa NaOH (gr)	Massa CaO (gr)	Berat Sampel (gr)	Volume Titran (ml)	Berat Molekul (gr/ek)	Normalitas (ek/L)	Angka Asam (mg KOH/gr)
	0.5	5.2	0.4	56.1	0.1	0.4315
0.2	1	5.3	0.4	56.1	0.1	0.4234
	1.5	5.3	0.4	56.1	0.1	0.4234
	0.5	4.9	0.3	56.1	0.1	0.3435
0.6	1	5	0.3	56.1	0.1	0.3366
	1.5	4.8	0.3	56.1	0.1	0.3506
	0.5	5.1	0.4	56.1	0.1	0.4400
1	1	5.3	0.5	56.1	0.1	0.5292
	1.5	5.2	0.5	56.1	0.1	0.5394

Tabel 6. Data Analisis Kadar Air

Massa NaOH (gr)	Massa CaO (gr)	Berat Kosong (gr)	Berat Awal (gr)	Berat Sampel (gr)	Setelah Pengeringan (gr)	Berat Akhir (gr)	Jumlah Air Yang Hilang (gr)	Kadar Air (%)
0.2	0.5	47.1791	50.2231	3.0440	50.0870	2.9079	0.1361	4.4711
	1	44.7180	47.7290	3.0110	47.6240	2.9060	0.1050	3.4872
	1.5	39.9322	42.9482	3.0160	42.8540	2.9218	0.0942	3.1233
0.6	0.5	43.8865	46.9235	3.0370	46.8230	2.9365	0.1005	3.3092
	1	35.0820	38.1360	3.0540	38.0410	2.9590	0.0950	3.1107
	1.5	28.2793	31.3053	3.0260	31.2200	2.9407	0.0853	2.8189
1	0.5	42.6650	45.7110	3.0460	45.6190	2.9540	0.0920	3.0204
	1	28.5892	31.6062	3.0170	31.5290	2.9398	0.0772	2.5588
	1.5	27.8374	30.8914	3.0380	30.7990	2.9616	0.0764	2.5148

Tabel 7. Data Analisis Titik Nyala dan Indeks Bias

Massa NaOH (gr)	Massa CaO (gr)	Titik Nyala °C	Indeks Bias
0.2	0.5	125.4	1.44911
	1	132.6	1.44931
	1.5	138.9	1.44861
0.6	0.5	162.5	1.44831
	1	157.6	1.44711
	1.5	144.8	1.44701
1	0.5	144.2	1.44733
	1	139.8	1.44803
	1.5	121.5	1.44813