

Lampiran A. Contoh Data Penelitian

Treatment CPO parit pada Ptm diikuti pencucian dengan NaOH 1 N

1) Flushing I dengan Aquadest (Jwi) pada Ptm 1 bar

t(menit)	dv (ml)	dt(jam)	A(m2)	dv (L)	Q(L/Jam)	J(L/Jam.m2)
5	93	0.083	0.375	0.093	1.120482	2.987952
10	92	0.083	0.375	0.092	1.108434	2.955823
15	91	0.083	0.375	0.091	1.096386	2.923695
20	92	0.083	0.375	0.092	1.108434	2.955823

2) Treatment CPO Parit pada Ptm 1 bar (Jw)

t(menit)	dv (ml)	dt(jam)	A(m2)	dv (L)	Q(L/Jam)	J(L/Jam.m2)
5	80	0.083	0.375	0.08	0.963855	2.570281
10	80	0.083	0.375	0.08	0.963855	2.570281
15	70	0.083	0.375	0.07	0.843373	2.248996
20	60	0.083	0.375	0.06	0.722892	1.927711
25	57	0.083	0.375	0.057	0.686747	1.831325
30	55	0.083	0.375	0.055	0.662651	1.767068
35	52	0.083	0.375	0.052	0.626506	1.670683
40	50	0.083	0.375	0.05	0.60241	1.606426
45	45	0.083	0.375	0.045	0.542169	1.445783
50	37	0.083	0.375	0.037	0.445783	1.188755
55	34	0.083	0.375	0.034	0.409639	1.092369
60	33	0.083	0.375	0.033	0.39759	1.060241
65	30	0.083	0.375	0.03	0.361446	0.963855
70	30	0.083	0.375	0.03	0.361446	0.963855
75	30	0.083	0.375	0.03	0.361446	0.963855
80	30	0.083	0.375	0.03	0.361446	0.963855
85	30	0.083	0.375	0.03	0.361446	0.963855
90	31	0.083	0.375	0.031	0.373494	0.995984

3) Flushing II dengan Aquadest (Jww) pada Ptm 1 bar

t(menit)	dv (ml)	dt(jam)	A(m2)	dv (L)	Q(L/Jam)	J(L/Jam.m2)
5	43	0.083	0.375	0.043	0.518072	1.381526
10	43	0.083	0.375	0.043	0.518072	1.381526
15	45	0.083	0.375	0.045	0.542169	1.445783
20	44	0.083	0.375	0.044	0.53012	1.413655

4) Washing III dengan Aquadest (Jc) pada Ptm 1 bar

t(menit)	dv (ml)	dt(jam)	A(m2)	dv (L)	Q(L/Jam)	J(L/Jam.m2)
5	53	0.083	0.375	0.053	0.638554	1.702811
10	55	0.083	0.375	0.055	0.662651	1.767068
15	56	0.083	0.375	0.056	0.674699	1.799197
20	60	0.083	0.375	0.06	0.722892	1.927711

5) Flushing III dengan Aquadest (Jwc) pada Ptm 1 bar

t(menit)	dv (ml)	dt(jam)	A(m2)	dv (L)	Q(L/Jam)	J(L/Jam.m2)
5	63	0.083	0.375	0.063	0.759036	2.024096
10	64	0.083	0.375	0.064	0.771084	2.056225
15	65	0.083	0.375	0.065	0.783133	2.088353
20	67	0.083	0.375	0.067	0.807229	2.15261



I. PENCUCIAN DENGAN NaOH 0 N

1) Treatment umpan pada Tekanan 0,5 bar diikuti pencucian dengan NaOH 0 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	2.088353	0.963855	1.028112	51.4056	48.19275	5.714283	6.25
10	2.088353	0.995984	1.092369	54.61845	49.7992	8.823484	8.823484
15	2.120482	1.060241	1.092369	54.61845	53.01205	3.030254	2.941131
20	2.056225	1.028112	1.092369	54.61845	51.4056	6.249994	5.882353

2) Treatment umpan pada Tekanan 1 bar diikuti pencucian dengan NaOH 0 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	2.570281	1.285141	1.381526	69.0763	64.25705	7.499961	6.976705
10	2.60421	1.349398	1.381526	69.0763	67.4699	2.560384	2.325544
15	2.570281	1.317269	1.381526	69.0763	65.86345	5.128203	4.651161
20	2.634538	1.381526	1.413655	70.68275	69.0763	2.564141	2.272761

3) Treatment Cpo pada Tekanan 1,5 bar diikuti pencucian dengan NaOH 0 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	2.891566	1.51004	1.638554	81.9277	75.502	9.302322	7.843135
10	2.891566	1.542169	1.606426	80.3213	77.10845	4.761905	3.999998
15	2.923695	1.542169	1.670683	83.53415	77.10845	9.302322	7.692303
20	2.923695	1.574297	1.670683	83.53415	78.71485	7.142889	5.769257

4) Treatment Cpo pada Tekanan 2 bar diikuti pencucian dengan NaOH 0 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	2.955823	1.51004	1.670683	83.53415	75.502	11.11114	9.615409
10	2.891566	1.381526	1.638554	81.9277	69.0763	17.02127	15.68627
15	2.923695	1.445783	1.702811	85.14055	72.28915	17.39129	15.09434
20	2.955823	1.574297	1.702811	85.14055	78.71485	9.302322	7.547168

II. PENCUCIAN DENGAN NaOH 0.5 N

1) Treatment Cpo pada Tekanan 0,5 bar diikuti pencucian dengan NaOH 0.5 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	2.570281	1.028112	1.349398	51.40562	37.05357	20.83333	27.91922
10	2.538153	1.060241	1.381526	53.01205	36.19186	21.73913	31.72899
15	2.538153	1.124498	1.381526	56.2249	36.19186	18.18182	35.63019
20	2.538153	1.156627	1.413655	57.83133	35.36932	18.60465	38.84055

2) Treatment Cpo parit pada Ptm 1 bar diikuti pencucian dengan NaOH 0.5 N

T	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	3.052209	1.349398	1.959839	67.46988	37.05357	35.84906	45.08131
10	3.084337	1.381526	1.991968	69.07631	36.19186	35.84906	47.60597
15	3.084337	1.413655	2.088353	70.68273	36.19186	40.38462	48.79674
20	3.052209	1.413655	2.216867	70.68273	35.36932	49.01961	49.96045

3) Treatment CPO pada Ptm 1.5 bar diikuti pencucian kimia dengan NaOH 0.5 N



t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	3.534137	1.445783	2.248966	72.28916	25.5123	38.4601	64.70799
10	3.534137	1.606426	2.248966	80.32129	25.10081	33.33178	68.7495
15	3.502008	1.73494	2.248966	86.74699	23.94231	29.08921	72.39984
20	3.566265	1.702811	2.281124	85.14056	22.55435	31.03446	73.50928

4) Treatment CPO pada Ptm 2 bar diikuti pencucian kimia dengan NaOH 0.5 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	3.534137	1.445783	2.281124	72.28916	21.91902	39.99998	69.67869
10	3.534137	1.606426	2.409639	80.32129	20.75	41.66669	74.16625
15	3.502008	1.73494	2.441767	86.74699	20.47697	40	76.3946
20	3.566265	1.702811	2.441767	85.14056	20.47697	39.65517	75.94921

III. PENCUCIAN DENGAN NaOH 1N

1) Treatment CPO parit pada Ptm 0.5 bar diikuti pencucian kimia dengan NaOH 1 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	2.666667	1.060241	1.734494	53.01205	28.82685	41.97224	45.62208
10	2.634538	1.124498	1.734494	56.2249	28.82685	40.39602	48.72939
15	2.666667	1.124498	1.381526	56.2249	36.19186	16.66666	35.63019
20	2.634538	1.156627	1.413655	57.83135	35.36931	17.3913	38.8406

2) Treatment CPO pada Ptm 1 bar diikuti pencucian kimia dengan NaOH 1 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	2.987952	1.381526	2.024096	69.0763	24.70239	39.99998	64.23899
10	2.955823	1.381526	2.056225	69.0763	24.31641	42.85716	64.79776
15	2.923695	1.445783	2.088353	72.28915	23.94231	43.47823	66.8798
20	2.955823	1.413655	2.15261	70.68275	23.22762	47.91663	67.13821

3) Treatment CPO pada Ptm 1.5 bar diikuti pencucian kimia dengan NaOH 1 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	3.212851	1.831325	2.409639	91.56625	20.75	41.86052	77.33882
10	3.180723	1.831325	2.473896	91.56625	20.21104	47.61909	77.92742
15	3.244981	1.895582	2.570281	94.7791	19.45313	49.99996	79.4753
20	3.212851	1.927711	2.602412	96.38555	19.21295	52.50019	80.06657

4) Treatment CPO pada Ptm 2 bar diikuti pencucian kimia dengan NaOH 1 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	3.855422	2.056225	2.739924	102.8113	18.24868	38.00023	82.25031
10	3.887551	2.15261	2.739924	107.6305	18.24868	33.8521	83.04506
15	3.855422	2.184739	2.859438	109.237	17.48595	40.38462	83.99264
20	3.855422	2.184739	2.923695	109.237	17.10165	44.23077	84.34445



PENCUCIAN DENGAN HCL

I. PENCUCIAN DENGAN HCL 0 N

1) TreatmwnT CPO pada Ptm 0.5 bar diikuti pencucian kimia dengan HCL 0 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	2.730924	1.124498	1.156627	56.2249	43.22915	2.00003	23.11387
10	2.570281	1.092369	1.24498	54.61845	40.16129	10.32612	26.46937
15	2.570281	1.060241	1.24498	53.01205	40.16129	12.23405	24.24121
20	2.570281	0.963855	1.24498	48.19275	40.16129	17.50003	16.66529

2)TreatmwnT CPO pada Ptm 1 bar diikuti pencucian kimia dengan HCL 0 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	2.891566	1.381526	1.413655	69.0763	35.36931	2.127692	48.79675
10	3.020081	1.381526	1.413655	69.0763	35.36931	1.960813	48.79675
15	2.987952	1.349398	1.381526	67.4699	36.19186	1.960753	46.3585
20	3.020081	1.317269	1.381526	65.86345	36.19186	3.773582	45.05016

3)TreatmwnT CPO pada Ptm 1.5 bar diikuti pencucian kimia dengan HCL 0 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	3.052209	1.445783	1.542169	72.28915	32.42187	6.000027	55.14974
10	2.891566	1.477912	1.542169	73.8956	32.42187	4.545455	56.12476
15	2.891566	1.477912	1.542169	73.8956	32.42187	4.545455	56.12476
20	2.891566	1.51004	1.542169	75.502	32.42187	2.325617	57.05827

4)TreatmwnT CPO pada Ptm 2 bar diikuti pencucian kimia dengan HCL 0 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	3.212851	1.606426	1.638554	80.3213	30.51471	1.999969	62.00919
10	3.277108	1.606426	1.638554	80.3213	30.51471	1.923047	62.00919
15	3.180723	1.574297	1.638554	78.71485	30.51471	3.999998	61.23386
20	3.148594	1.542169	1.638554	77.10845	30.51471	5.999969	60.42624

II. PENCUCIAN DENGAN HCL 0.5 N

1) Treatment Cpo parit pada Tekanan 0,5 bar diikuti pencucian kimia dengan HCL 0.5 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	2.891566	1.124498	1.285141	56.2249	38.90625	9.09091	30.80246
10	2.923695	1.060241	1.188755	53.01205	42.06081	6.896549	20.65802
15	2.923695	1.124498	1.220884	56.2249	40.95395	5.357142	27.16048
20	2.891566	1.124498	1.220884	56.2249	40.95395	5.454546	27.16048

2)Treatment Cpo parit pada Ptm 1 bar diikuti pencucian dengan HCL 0.5 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	1.927711	1.188755	1.285141	59.43775	38.90624	13.04354	34.54288
10	1.895582	1.188755	1.285141	59.43775	38.90624	13.63643	34.54288
15	1.927711	1.220884	1.317269	61.0442	37.95732	13.6363	37.81994
20	1.927711	1.220884	1.317269	61.0442	37.95732	13.6363	37.81994



3)Treatment CPO pada Ptm 1.5 bar diikuti pencucian kimia dengan HCL 0.5N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	2.088353	1.285141	1.445783	64.25705	34.58334	19.99995	46.1797
10	2.15261	1.317269	1.51004	65.86345	33.11171	23.07692	49.72674
15	2.15261	1.285141	1.51004	64.25705	33.11171	25.92588	48.46993
20	2.184739	1.253012	1.574297	62.6506	31.76021	34.48274	49.30582

4)Treatment CPO pada Ptm 2 bar diikuti pencucian kimia dengan HCL 0.5 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	2.248996	1.285141	1.831000	64.25705	27.30748	56.6329	57.50275
10	2.281124	1.317269	1.831325	65.86345	27.30264	53.33333	58.54661
15	2.248996	1.349398	1.863454	67.4699	26.83189	57.14286	60.23131
20	2.313253	1.349398	1.863454	67.4699	26.83189	53.33333	60.23131

III. PENCUCIAN DENGAN HCL 1 N

1) Treatment Cpo pada Tekanan 0.5 bar diikuti pencucian kimia dengan HCL 1 N

t	Jwi	Jww	Jwc		Rc		RR
5	2.891566	1.445783	1.927711	72.28915	25.9375	33.33336	64.11979
10	2.923695	1.477912	1.863454	73.8956	26.83189	26.66666	63.68346
15	2.923695	1.445783	1.895582	72.28915	26.37712	30.43476	63.51164
20	2.891566	1.477912	1.895582	73.8956	26.37712	29.54542	64.30488

2)Treatment Cpo parit pada Ptm 1 bar diikuti pencucian dengan HCL 1 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	3.534137	1.606426	1.895582	72.28915	26.37712	21.53845	63.51164
10	3.534137	1.606426	1.927711	73.8956	25.9375	21.87499	64.89981
15	2.891566	1.638554	1.927711	72.28915	25.9375	33.33336	64.11979
20	3.212851	1.638554	1.895582	73.8956	26.37712	24.07405	64.30488

3)Treatment CPO pada Ptm 1.5 bar diikuti pencucian kimia dengan HCL 1 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	3.534137	1.927711	2.37751	96.38555	21.03041	27.99998	78.18096
10	3.791165	1.767068	2.345382	88.3534	21.31849	28.57146	75.87134
15	3.630522	1.767068	2.345382	88.3534	21.31849	31.03452	75.87134
20	3.791165	1.73494	2.345382	86.747	21.31849	29.68751	75.42452

4)Treatment CPO pada Ptm 2 bar diikuti pencucian kimia dengan HCL 1 N

t	Jwi	Jww	Jwc	Rf	Rc	FR	RR
5	4.016064	1.606426	2.216867	80.3213	22.55435	25.33331	71.91984
10	3.855422	1.767068	2.441767	88.3534	20.47697	32.30769	76.82378
15	3.694779	1.927711	2.473839	96.38555	20.2115	30.90588	79.03057
20	3.759036	2.088353	2.506024	104.4177	19.95192	25.00001	80.89219

