





LAMPIRAN

Lampiran 1. Kain Hasil Pencelupan Benang Wol 100% Menggunakan Zat Warna Reaktif dengan variasi Levelling Agent (Albegal B).

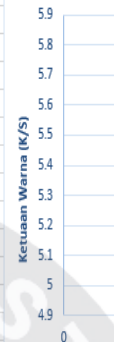
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Lampiran 1 Kain Hasil Pencelupan Benang Wol 100% Menggunakan Zat Warna Reaktif dengan variasi Levelling Agent (Albegal B).

Konsentrasi Levelling Agent (Albegal B)	Hasil Pencelupan
1%	
1.5%	
2%	
2.5%	

Lampiran 2. Data K/S Panjang Gelombang di 400 nm (3x tembak spektro)

21																					
22		Sample 1.2.5%	54.36	9.57		19.86	22.05	64.26	5	4.78	4.37	3.93									
23		Sample 2.2.5%	54.37	9.64		19.87	22.08	64.11	5.02	4.78	4.37	3.93									
24		Sample 3.2.5%	54.49	9.53		19.69	21.87	64.17	4.92	4.71	4.3	3.86									
25																					
26			Data K/S Panjang Gelombang 400 nm																		
27			Konsentrasi Albegal B	K/S (400 nm)			Rata-rata														
28			1	5.29	5.34	5.25	5.293333														
29			1.5	5.75	5.83	5.77	5.783333														
30			2	5.42	5.47	5.48	5.456667														
31			2.5	5	5.02	4.92	4.98														
32																					
33																					
34																					
35																					
36																					
37																					
38																					
39																					
an																					



Lampiran 3. Perhitungan Kerataan Warna Berdasarkan Nilai RUI

Sampel 1 (Albegal 1%)

2																						
3			400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590
4	sampel 1%	R1	8	8.28	8.93	9.77	10.86	12.27	13.95	15.62	16.82	17.44	17.59	17.59	17.79	18.38	19.31	20.74	23.16	26.42	29	30.17
5		R2	7.94	8.24	8.88	9.74	10.82	12.24	13.93	15.59	16.77	17.4	17.54	17.51	17.7	18.29	19.23	20.66	23.11	26.37	28.95	30.09
6		R3	8.05	8.32	8.97	9.8	10.88	12.31	14	15.65	16.85	17.49	17.62	17.57	17.76	18.36	19.29	20.72	23.17	26.45	29.02	30.15
7		R	7.99667	8.28	8.92667	9.77	10.8533	12.2733	13.96	15.62	16.8133	17.4433	17.5833	17.5567	17.75	18.3433	19.2767	20.7067	23.1467	26.4133	28.99	30.1367
8		(R1-R)^2	1.1E-05	0	1.1E-05	0	4.4E-05	1.1E-05	1E-04	0	4.4E-05	1.1E-05	4.4E-05	0.00111	0.0016	0.00134	0.00111	0.00111	0.00018	4.4E-05	0.0001	0.00111
9		(R2-R)^2	0.00321	0.0016	0.00218	0.0009	0.00111	0.0011	0.0009	0.0009	0.00188	0.00188	0.00188	0.00218	0.0025	0.00284	0.00218	0.00218	0.00134	0.00188	0.0016	0.00218
10		(R3-R)^2	0.00284	0.0016	0.00188	0.0009	0.00071	0.00134	0.0016	0.0009	0.00134	0.00218	0.00134	0.00018	0.0001	0.00028	0.00018	0.00018	0.00054	0.00134	0.0009	0.00018
11		Σ(Ri-R)^2	0.00607	0.0032	0.00407	0.0018	0.00187	0.00247	0.0026	0.0018	0.00327	0.00407	0.00327	0.00347	0.0042	0.00447	0.00347	0.00347	0.00207	0.00327	0.0026	0.00347
12		SA	0.05508	0.04	0.04509	0.03	0.03055	0.03512	0.03606	0.03	0.04041	0.04509	0.04041	0.04163	0.04583	0.04726	0.04163	0.04163	0.03215	0.04041	0.03606	0.04163
13		SA/R	0.00689	0.00483	0.00505	0.00307	0.00281	0.00286	0.00258	0.00192	0.0024	0.00259	0.0023	0.00237	0.00258	0.00258	0.00216	0.00201	0.00139	0.00153	0.00124	0.00138
14	VA	0.0004	0.00121	0.004	0.0116	0.023	0.038	0.06	0.09098	0.13902	0.20802	0.323	0.503	0.71	0.862	0.954	0.99495	0.995	0.952	0.87	0.757	
15	(SA/R)^2	2.8E-06	5.8E-06	2E-05	3.6E-05	6.5E-05	0.00011	0.00015	0.00017	0.00033	0.00054	0.00074	0.00119	0.00183	0.00222	0.00206	0.002	0.00138	0.00146	0.00108	0.00105	

	600	610	620	630	640	650	660	670	680	690	700										
	30.42	30.57	30.9	31.45	32.58	34.46	37.5	41.79	47	52.3	57.08										
	30.33	30.42	30.75	31.31	32.41	34.37	37.43	41.73	46.96	52.31	57.16										
	30.4	30.47	30.82	31.36	32.46	34.42	37.45	41.74	46.97	52.29	57.07										
	30.3833	30.4867	30.8233	31.3733	32.4833	34.4167	37.46	41.7533	46.9767	52.3	57.1033										
	0.00134	0.00694	0.00588	0.00588	0.00934	0.00188	0.0016	0.00134	0.00054	5E-29	0.00054										
	0.00284	0.00444	0.00538	0.00401	0.00538	0.00218	0.0009	0.00054	0.00028	1E-04	0.00321										
	0.00028	0.00028	1.1E-05	0.00018	0.00054	1.1E-05	1E-04	0.00018	4.4E-05	0.0001	0.00111										
	0.00447	0.01167	0.01127	0.01007	0.01527	0.00407	0.0026	0.00207	0.00087	0.0002	0.00487										
	0.04726	0.07638	0.07506	0.07095	0.08737	0.04509	0.03606	0.03215	0.02082	0.01	0.04933										
	0.00156	0.00251	0.00244	0.00226	0.00269	0.00131	0.00096	0.00077	0.00044	0.00019	0.00086	1.34649	(RUI)u								
	0.631	0.503	0.381	0.265	0.175	0.107	0.061	0.032	0.017	0.00821	0.0041	0.07054	(RUI)c								
	0.00098	0.00126	0.00093	0.0006	0.00047	0.00014	5.9E-05	2.5E-05	7.5E-06	1.6E-06	3.5E-06	0.02093	(RUI)								

Sampel 2 (Albegal B 1,5%)

		400	410	420	430	440	450	460	470	480	490	500	510	
17														
18		R1	7.45	7.7	8.29	9.07	10.07	11.39	12.98	14.57	15.72	16.33	16.47	16.46
19		R2	7.36	7.61	8.21	8.97	9.95	11.27	12.84	14.39	15.52	16.12	16.27	16.24
20		R3	7.43	7.68	8.29	9.06	10.07	11.39	12.98	14.55	15.67	16.27	16.41	16.37
21		R	7.413333	7.663333	8.263333	9.033333	10.03	11.35	12.93333	14.50333	15.63667	16.24	16.38333	16.35667
22	sampel 1.5%	(R1-R)^2	0.001344	0.001344	0.000711	0.001344	0.0016	0.0016	0.002178	0.004444	0.006944	0.0081	0.007511	0.010678
23		(R2-R)^2	0.002844	0.002844	0.002844	0.004011	0.0064	0.0064	0.008711	0.012844	0.013611	0.0144	0.012844	0.013611
24		(R3-R)^2	0.000278	0.000278	0.000711	0.000711	0.0016	0.0016	0.002178	0.002178	0.001111	0.0009	0.000711	0.000178
25		$\Sigma(Ri-R)^2$	0.004467	0.004467	0.004267	0.006067	0.0096	0.0096	0.013067	0.019467	0.021667	0.0234	0.021067	0.024467
26		$S\lambda$	0.047258	0.047258	0.046188	0.055076	0.069282	0.069282	0.080829	0.098658	0.104083	0.108167	0.102632	0.110604
27		$S\lambda/R$	0.006375	0.006167	0.005559	0.006097	0.006907	0.006104	0.00625	0.006802	0.006656	0.006661	0.006264	0.006762
28		$V\lambda$	0.0004	0.00121	0.004	0.0116	0.023	0.038	0.06	0.09098	0.13902	0.20802	0.323	0.503
29		$(S\lambda/R)*V\lambda$	2.55E-06	7.46E-06	2.24E-05	7.07E-05	0.000159	0.000232	0.000375	0.000619	0.000925	0.001386	0.002023	0.003401

	520	530	540	550	560	570	580	590
16	16.62	17.15	18	19.31	21.5	24.46	26.85	27.97
24	16.4	16.92	17.78	19.07	21.26	24.21	26.59	27.7
37	16.53	17.04	17.9	19.19	21.39	24.33	26.7	27.78
37	16.51667	17.03667	17.89333	19.19	21.38333	24.33333	26.71333	27.81667
78	0.010678	0.012844	0.011378	0.0144	0.013611	0.016044	0.018678	0.023511
11	0.013611	0.013611	0.012844	0.0144	0.015211	0.015211	0.015211	0.013611
78	0.000178	1.11E-05	4.44E-05	1.26E-29	4.44E-05	1.11E-05	0.000178	0.001344
37	0.024467	0.026467	0.024267	0.0288	0.028867	0.031267	0.034067	0.038467
14	0.110604	0.115036	0.110151	0.12	0.120139	0.125033	0.130512	0.138684
32	0.006697	0.006752	0.006156	0.006253	0.005618	0.005138	0.004886	0.004986
	0.71	0.862	0.954	0.99495	0.995	0.952	0.87	0.757
11	0.004755	0.00582	0.005873	0.006222	0.00559	0.004892	0.004251	0.003774

	590	600	610	620	630	640	650	660	670	680	690	700	
	27.97	28.25	28.42	28.76	29.36	30.51	32.48	35.59	39.89	45.02	50.23	54.87	
	27.7	27.97	28.14	28.51	29.09	30.23	32.21	35.31	39.64	44.81	50.03	54.74	
	27.78	28.05	28.18	28.52	29.12	30.25	32.24	35.32	39.57	44.73	49.87	54.52	
	27.81667	28.09	28.24667	28.59667	29.19	30.33	32.31	35.40667	39.7	44.85333	50.04333	54.71	
	0.023511	0.0256	0.030044	0.026678	0.0289	0.0324	0.0289	0.033611	0.0361	0.027778	0.034844	0.0256	
	0.013611	0.0144	0.011378	0.007511	0.01	0.01	0.01	0.009344	0.0036	0.001878	0.000178	0.0009	
	0.001344	0.0016	0.004444	0.005878	0.0049	0.0064	0.0049	0.007511	0.0169	0.015211	0.030044	0.0361	
	0.038467	0.0416	0.045867	0.040067	0.0438	0.0488	0.0438	0.050467	0.0566	0.044867	0.065067	0.0626	
	0.138684	0.144222	0.151438	0.141539	0.147986	0.156205	0.147986	0.15885	0.168226	0.149778	0.18037	0.176918	
	0.004986	0.005134	0.005361	0.004949	0.00507	0.00515	0.00458	0.004486	0.004237	0.003339	0.003604	0.003234	
	0.757	0.631	0.503	0.381	0.265	0.175	0.107	0.061	0.032	0.017	0.00821	0.0041	
	0.003774	0.00324	0.002697	0.001886	0.001343	0.000901	0.00049	0.000274	0.000136	5.68E-05	2.96E-05	1.33E-05	
											0.061465	RUI	
												3.632996	(RUI)u
												0.172267	(RUI)c

Sampel 3 (Albegal B 2%)

30			400	410	420	430	440	450	460	470	480	490	500
31													
32		R1	7.84	8.1	8.74	9.54	10.58	11.91	13.47	15	16.06	16.6	16.71
33		R2	7.78	8.06	8.7	9.5	10.53	11.85	13.41	14.94	16.01	16.53	16.63
34		R3	7.76	8.05	8.67	9.48	10.52	11.85	13.4	14.92	15.97	16.5	16.6
35		R	7.793333	8.07	8.703333	9.506667	10.54333	11.87	13.42667	14.95333	16.01333	16.54333	16.64667
36		(R1-R)^2	0.002178	0.0009	0.001344	0.001111	0.001344	0.0016	0.001878	0.002178	0.002178	0.003211	0.004011
37	sampel	(R2-R)^2	0.000178	1E-04	1.11E-05	4.44E-05	0.000178	0.0004	0.000278	0.000178	1.11E-05	0.000178	0.000278
38	2%	(R3-R)^2	0.001111	0.0004	0.001111	0.000711	0.000544	0.0004	0.000711	0.001111	0.001878	0.001878	0.002178
39		Σ(Ri-R)^2	0.003467	0.0014	0.002467	0.001867	0.002067	0.0024	0.002867	0.003467	0.004067	0.005267	0.006467
40		Sλ	0.041633	0.026458	0.035119	0.030551	0.032146	0.034641	0.037859	0.041633	0.045092	0.051316	0.056862
41		Sλ/R	0.005342	0.003279	0.004035	0.003214	0.003049	0.002918	0.00282	0.002784	0.002816	0.003102	0.003416
42		vλ	0.0004	0.00121	0.004	0.0116	0.023	0.038	0.06	0.09098	0.13902	0.20802	0.323
43		(Sλ/R)*vλ	2.14E-06	3.97E-06	1.61E-05	3.73E-05	7.01E-05	0.000111	0.000169	0.000253	0.000391	0.000645	0.001103

500	510	520	530	540	550	560	570	580	590	600
16.71	16.67	16.83	17.38	18.28	19.63	21.92	25.02	27.54	28.74	29.1
16.63	16.6	16.77	17.3	18.19	19.55	21.83	24.93	27.46	28.7	29.05
16.6	16.56	16.72	17.26	18.15	19.5	21.78	24.86	27.37	28.57	28.91
16.64667	16.61	16.77333	17.31333	18.20667	19.56	21.84333	24.93667	27.45667	28.67	29.02
0.004011	0.0036	0.003211	0.004444	0.005378	0.0049	0.005878	0.006944	0.006944	0.0049	0.0064
0.000278	1E-04	1.11E-05	0.000178	0.000278	1E-04	0.000178	4.44E-05	1.11E-05	0.0009	0.0009
0.002178	0.0025	0.002844	0.002844	0.003211	0.0036	0.004011	0.005878	0.007511	0.01	0.0121
0.006467	0.0062	0.006067	0.007467	0.008867	0.0086	0.010067	0.012867	0.014467	0.0158	0.0194
0.056862	0.055678	0.055076	0.061101	0.066583	0.065574	0.070946	0.080208	0.085049	0.088882	0.098489
0.003416	0.003352	0.003284	0.003529	0.003657	0.003352	0.003248	0.003216	0.003098	0.0031	0.003394
0.323	0.503	0.71	0.862	0.954	0.99495	0.995	0.952	0.87	0.757	0.631
0.001103	0.001686	0.002331	0.003042	0.003489	0.003336	0.003232	0.003062	0.002695	0.002347	0.002141

610	620	630	640	650	660	670	680	690	700		
29.31	29.69	30.31	31.45	33.4	36.43	40.56	45.43	50.26	54.54		
29.24	29.59	30.17	31.34	33.28	36.33	40.51	45.4	50.26	54.57		
29.08	29.46	30.04	31.19	33.14	36.14	40.27	45.12	49.9	54.17		
29.21	29.58	30.17333	31.32667	33.27333	36.3	40.44667	45.31667	50.14	54.42667		
0.01	0.0121	0.018678	0.015211	0.016044	0.0169	0.012844	0.012844	0.0144	0.012844		
0.0009	1E-04	1.11E-05	0.000178	4.44E-05	0.0009	0.004011	0.006944	0.0144	0.020544		
0.0169	0.0144	0.017778	0.018678	0.017778	0.0256	0.031211	0.038678	0.0576	0.065878		
0.0278	0.0266	0.036467	0.034067	0.033867	0.0434	0.048067	0.058467	0.0864	0.099267		
0.117898	0.115326	0.135031	0.130512	0.130128	0.147309	0.155027	0.170978	0.207846	0.222785	2.693736	(RUI)u
0.004036	0.003899	0.004475	0.004166	0.003911	0.004058	0.003833	0.003773	0.004145	0.004093	0.110394	(RUI)c
0.503	0.381	0.265	0.175	0.107	0.061	0.032	0.017	0.00821	0.0041		
0.00203	0.001485	0.001186	0.000729	0.000418	0.000248	0.000123	6.41E-05	3.4E-05	1.68E-05	0.036498	RUI

Sampel 4 (Albegal B 2,5%)

		400	410	420	430	440	450	460	470	480	490	500	510
sampel 2.5%	R1	8.39	8.71	9.4	10.24	11.32	12.68	14.22	15.69	16.65	17.11	17.18	17.18
	R2	8.37	8.71	9.4	10.25	11.34	12.67	14.22	15.71	16.68	17.1	17.17	17.17
	R3	8.51	8.82	9.52	10.39	11.47	12.83	14.39	15.88	16.85	17.27	17.33	17.33
	R	8.423333	8.746667	9.44	10.29333	11.37667	12.72667	14.27667	15.76	16.72667	17.16	17.22667	17.22667
	(R1-R) ²	0.001111	0.001344	0.0016	0.002844	0.003211	0.002178	0.003211	0.0049	0.005878	0.0025	0.002178	0.002178
	(R2-R) ²	0.002844	0.001344	0.0016	0.001878	0.001344	0.003211	0.003211	0.0025	0.002178	0.0036	0.003211	0.003211
	(R3-R) ²	0.007511	0.005378	0.0064	0.009344	0.008711	0.010678	0.012844	0.0144	0.015211	0.0121	0.010678	0.010678
	Σ(Ri-R) ²	0.011467	0.008067	0.0096	0.014067	0.013267	0.016067	0.019267	0.0218	0.023267	0.0182	0.016067	0.016067
	S _λ	0.075719	0.063509	0.069282	0.083865	0.081445	0.089629	0.09815	0.104403	0.107858	0.095394	0.089629	0.089629
	S _λ /R	0.008989	0.007261	0.007339	0.008148	0.007159	0.007043	0.006875	0.006625	0.006448	0.005559	0.005203	0.005203
	V _λ	0.0004	0.00121	0.004	0.0116	0.023	0.038	0.06	0.09098	0.13902	0.20802	0.323	0.5
	(S _λ /R)*V _λ	3.6E-06	8.79E-06	2.94E-05	9.45E-05	0.000165	0.000268	0.000417	0.000603	0.000896	0.001156	0.001681	0.002552

	510	520	530	540	550	560	570	580	590	600	610
	17.14	17.3	17.85	18.76	20.13	22.41	25.47	27.92	29.05	29.37	29.44
	17.12	17.29	17.83	18.74	20.11	22.41	25.48	27.97	29.15	29.44	29.44
	17.28	17.44	17.96	18.87	20.23	22.51	25.59	28.07	29.24	29.51	29.51
	17.18	17.343333	17.88	18.79	20.15667	22.44333	25.51333	27.98	29.05	29.44	29.44
	0.0016	0.001878	0.0009	0.0009	0.000711	0.001111	0.001878	0.004444	0.009344	0.0049	0.0049
	0.0036	0.002844	0.0025	0.0025	0.002178	0.001111	0.001111	0.000278	1.11E-05	0	0.0049
	0.01	0.009344	0.0064	0.0064	0.005378	0.004444	0.005878	0.006944	0.008711	0.0049	0.0049
	0.0152	0.014067	0.0098	0.0098	0.008267	0.006667	0.008867	0.011667	0.018067	0.0098	0.0098
	0.087178	0.083865	0.07	0.07	0.064291	0.057735	0.066583	0.076376	0.095044	0.07	0.07
	0.005074	0.004836	0.003915	0.003725	0.00319	0.002572	0.00261	0.002729	0.003261	0.002378	0.002378
	0.503	0.71	0.862	0.954	0.99495	0.995	0.952	0.87	0.757	0.631	0.5
	0.002552	0.003433	0.003375	0.003554	0.003173	0.00256	0.002484	0.002374	0.002468	0.0015	0.0015

	610	620	630	640	650	660	670	680	690	700		
	29.56	29.93	30.54	31.69	33.62	36.66	40.81	45.76	50.61	54.99		
	29.6	29.95	30.55	31.71	33.64	36.68	40.85	45.81	50.76	55.13		
	29.68	30.02	30.62	31.75	33.66	36.67	40.89	45.83	50.76	55.2		
	29.61333	29.96667	30.57	31.71667	33.64	36.67	40.85	45.8	50.71	55.10667		
	0.002844	0.001344	0.0009	0.000711	0.0004	0.0001	0.0016	0.0016	0.01	0.013611		
	0.000178	0.000278	0.0004	4.44E-05	5.05E-29	1E-04	0	0.0001	0.0025	0.000544		
	0.004444	0.002844	0.0025	0.001111	0.0004	0	0.0016	0.0009	0.0025	0.008711		
	0.007467	0.004467	0.0038	0.001867	0.0008	0.0002	0.0032	0.0026	0.015	0.022867		
	0.061101	0.047258	0.043589	0.030551	0.02	0.01	0.04	0.036056	0.086603	0.106927	2.182038	(RUI)u
	0.002063	0.001577	0.001426	0.000963	0.000595	0.000273	0.000979	0.000787	0.001708	0.00194	0.123249	(RUI)c
	0.503	0.381	0.265	0.175	0.107	0.061	0.032	0.017	0.00821	0.0041		
	0.001038	0.000601	0.000378	0.000169	6.36E-05	1.66E-05	3.13E-05	1.34E-05	1.4E-05	7.96E-06	0.035124	RUI

: RUI mainly consisted of four equations: (a) the standard deviation (s_{λ}) of reflectance values R at a specific wavelength (Equation (3)); (b) the uncorrected relative unlevelness index (RUI_u) and (c) the corrected relative unlevelness index (RUI_c) obtained by the summation of the coefficients of

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4	Name	L*	a*	b*						sampel 1 (1%)				
5	sampel 1. 1%	55.06	9.43	21.76						d.1	d.a	d.b	d.e	
6	sampel 2. 1%	54.98	9.43	21.72						-1.97666667	0.276667	-0.19333	4.021133	
7	sampel 3. 1%	55.05	9.4	21.65										
8		55.03	9.42	21.71										
9														
10	Name	L*	a*	b*						sampel 2 (1.5%)				
11	sampel 1. 1.5	53.38	9.17	21.26						d.1	d.a	d.b	d.e	
12	sampel 2. 1.5	53.13	9.25	21.2						-0.2	0.52	0.343333	0.428278	
13	sampel 3. 1.5	53.25	9.11	21.06										
14		53.25333	9.176667	21.17333										
15														
16	Name	L*	a*	b*						sampel 3 (2%)				
17	sampel 1. 2%	53.89	9.8	20.9						d.1	d.a	d.b	d.e	
18	sampel 2. 2%	53.81	9.82	20.91						-0.76	-0.09333	0.64	0.995911	
19	sampel 3. 2%	53.74	9.75	20.82										
20		53.81333	9.79	20.87667										
21														

14		53.25333	9.176667	21.17333										
15														
16	Name	L*	a*	b*						sampel 3 (2%)				
17	sampel 1. 2%	53.89	9.8	20.9						d.1	d.a	d.b	d.e	
18	sampel 2. 2%	53.81	9.82	20.91						-0.76	-0.09333	0.64	0.995911	
19	sampel 3. 2%	53.74	9.75	20.82										
20		53.81333	9.79	20.87667										
21														
22	Name	L*	a*	b*						sampel 4 (2.5%)				
23	sampel 1. 2.5	54.36	9.57	19.86						d.1	d.a	d.b	d.e	
24	sampel 2. 2.5	54.37	9.64	19.87						-1.353333333	0.116667	1.71	4.769222	
25	sampel 3. 2.5	54.49	9.53	19.69										
26		54.40667	9.58	19.80667										
27														
28														

