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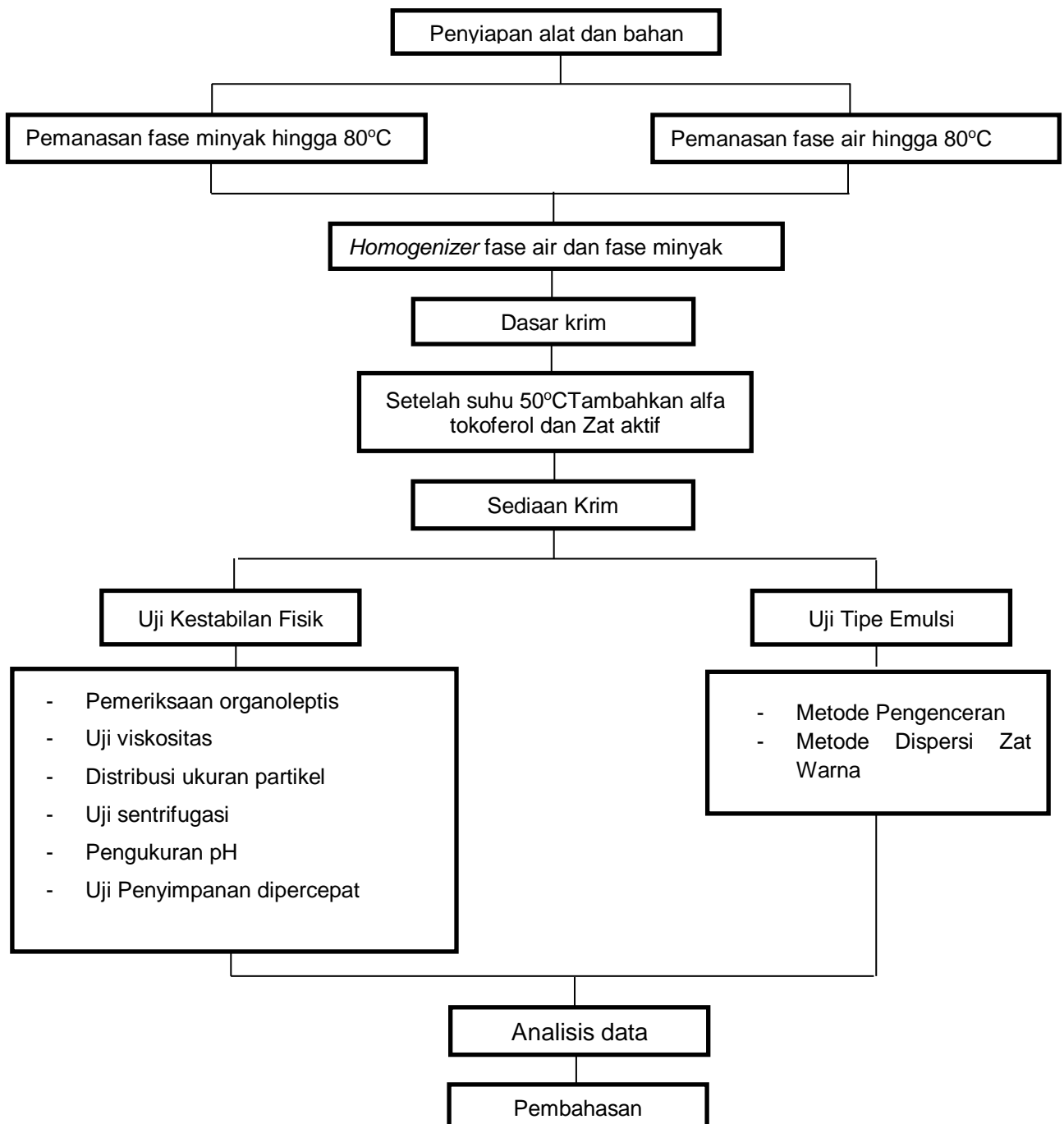
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LAMPIRAN

Lampiran 1. Skema Formulasi dan Evaluasi Krim dari Senyawa Fucoidan Tipe M/A



Lampiran 2. Tabel Hasil Evaluasi Sediaan Krim dari Senyawa

Fucoidan Tipe M/A

Lampiran 2.1 Tabel pengukuran pH

Formula	Replikasi	Sebelum uji stabilitas	Rata-rata	SD	Setelah uji stabilitas	Rata-rata	SD
F1	1	5,06	5,07	0,005774	5,07	5,07	0,005774
	2	5,07			5,07		
	3	5,07			5,08		
F2	1	5,04	5,04	0,015275	5,08	5,05	0,030551
	2	5,06			5,02		
	3	5,03			5,04		
F3	1	5,03	5,02	0,011547	5,04	5,02	0,017321
	2	5,01			5,01		
	3	5,01			5,01		
F4	1	4,94	4,93	0,036056	4,93	4,93	0,005774
	2	4,89			4,94		
	3	4,93			4,93		

Lampiran 2.2 Tabel pengukuran viskositas

Formula	Replikasi	Sebelum uji stabilitas	Rata-rata	SD	Setelah uji stabilitas	Rata-rata	SD
F1	1	11600	11200	400	11200	11333,33	611,0101
	2	11200			10800		
	3	10800			12000		
F2	1	14800	14400	400	14400	14533,33	230,9401
	2	14400			14800		
	3	14000			14400		
F3	1	14400	15733,33	1222,02	14400	15866,67	1285,82
	2	16000			16800		
	3	16800			16400		
F4	1	16000	16133,33	1803,7	16000	16266,67	461,8802
	2	18000			16800		
	3	14400			16000		

Lampiran 2.3 Tabel pengukuran distribusi ukuran partikel

Formula 1 sebelum uji stabilitas

Kelas	D	N	%n	%n _{kml}	nd	nd ²	nd ³	nd ⁴	%nd ³	%nd ³ _{kumul}
1	0,59	11	3,67	3,67	6,435	3,76	2,20	1,29	0,36	0,36
2	0,85	55	18,33	22,00	46,475	39,27	33,18	28,04	5,39	5,74
3	1,11	111	37,00	59,00	122,655	135,53	149,76	165,49	24,31	30,06
4	1,37	79	26,33	85,33	107,835	147,19	200,92	274,26	32,62	62,68
5	1,63	35	11,67	97,00	56,875	92,42	150,19	244,05	24,38	87,06
6	1,89	7	2,33	99,33	13,195	24,87	46,88	88,38	7,61	94,67
7	2,15	0	0,00	99,33	0	0,00	0,00	0,00	0,00	94,67
8	2,41	1	0,33	96,00	2,405	5,78	13,91	33,45	2,26	96,93
9	2,67	1	0,33	78,00	2,665	7,10	18,93	50,44	3,07	100,00
Σ		300	100,00	639,67	358,54	455,95	615,98	885,40	100	572,16
d _{in}		1,19513		d _{sn}	1,23281		d _{vn}	0,11111		
d _{sl}		1,27167		d _{vs}	1,35100		d _{wm}	1,43739		

Formula 1 setelah uji stabilitas

Kelas	D	N	%n	%n _{kml}	nd	nd ²	nd ³	nd ⁴	%nd ³	%nd ³ _{kumul}
1	0,49	21	7,00	7,00	10,29	5,04	2,47	1,21	0,64	0,64
2	0,66	57	19,00	26,00	37,62	24,83	16,39	10,82	4,28	4,92
3	0,83	57	19,00	45,00	47,31	39,27	32,59	27,05	8,50	13,43
4	1,00	56	18,67	63,67	56	56,00	56,00	56,00	14,61	28,04
5	1,17	52	17,33	81,00	60,84	71,18	83,28	97,44	21,73	49,77
6	1,34	22	7,33	88,33	29,48	39,50	52,93	70,93	13,81	63,58
7	1,51	24	8,00	96,33	36,24	54,72	82,63	124,77	21,56	85,15
8	1,68	8	2,67	92,00	13,44	22,58	37,93	63,73	9,90	95,04
9	1,85	3	1,00	74,00	5,55	10,27	18,99	35,14	4,96	100,00
Σ		300	100,00	573,33	296,77	323,39	383,23	487,09	100	440,57
d _{in}		0,98923		d _{sn}	1,03826		d _{vn}	0,11111		
d _{sl}		1,08971		d _{vs}	1,18502		d _{wm}	1,27103		

Formula 2 sebelum uji stabilitas

Kelas	D	N	%n	%n _{kml}	nd	nd ²	nd ³	nd ⁴	%nd ³	%nd ³ _{kumul}
1	0,15	1	0,33	0,33	0,15	0,02	0,00	0,00	0,00	0,00
2	0,34	1	0,33	0,67	0,34	0,12	0,04	0,01	0,01	0,01
3	0,53	6	2,00	2,67	3,18	1,69	0,89	0,47	0,29	0,30
4	0,72	67	22,33	25,00	48,24	34,73	25,01	18,01	8,03	8,33

5	0,91	110	36,67	61,67	100,1	91,09	82,89	75,43	26,60	34,93
6	1,10	79	26,33	88,00	86,9	95,59	105,15	115,66	33,74	68,67
7	1,29	20	6,67	94,67	25,8	33,28	42,93	55,38	13,78	82,45
8	1,48	14	4,67	99,00	20,72	30,67	45,39	67,17	14,56	97,01
9	1,67	2	0,67	99,33	3,34	5,58	9,31	15,56	2,99	100,00
Σ		300	100,00	471,33	288,77	292,76	311,62	347,70	100	391,69
d_{in}		0,96257		d_{sn}	0,98786		d_{vn}	0,11111		
d_{sl}		1,01383		d_{vs}	1,06441		d_{wm}	1,11578		

Formula 2 setelah uji stabilitas

Kelas	D	N	%n	%n _{kml}	nd	nd ²	nd ³	nd ⁴	%nd ³	%nd ³ _{kumul}
1	0,45	21	7,00	7,00	9,45	4,25	1,91	0,86	1,05	1,05
2	0,60	82	27,33	34,33	49,2	29,52	17,71	10,63	9,72	10,77
3	0,75	78	26,00	60,33	58,5	43,88	32,91	24,68	18,05	28,82
4	0,90	67	22,33	82,67	60,3	54,27	48,84	43,96	26,80	55,62
5	1,05	27	9,00	91,67	28,35	29,77	31,26	32,82	17,15	72,77
6	1,20	19	6,33	98,00	22,8	27,36	32,83	39,40	18,01	90,79
7	1,35	5	1,67	99,67	6,75	9,11	12,30	16,61	6,75	97,54
8	1,50	0	0,00	92,67	0	0,00	0,00	0,00	0,00	97,54
9	1,65	1	0,33	65,67	1,65	2,72	4,49	7,41	2,46	100,00
Σ		300	100,00	632,00	237	200,88	182,26	176,36	100	554,89
d_{in}		0,79000		d_{sn}	0,81829		d_{vn}	0,11111		
d_{sl}		0,84759		d_{vs}	0,90729		d_{wm}	0,96766		

Formula 3 sebelum uji stabilitas

Kelas	D	N	%n	%n _{kml}	nd	nd ²	nd ³	nd ⁴	%nd ³	%nd ³ _{kumul}
1	0,28	2	0,67	0,67	0,56	0,16	0,04	0,01	0,02	0,02
2	0,45	38	12,67	13,33	17,1	7,70	3,46	1,56	1,79	1,81
3	0,62	94	31,33	44,67	58,28	36,13	22,40	13,89	11,59	13,40
4	0,79	76	25,33	70,00	60,04	47,43	37,47	29,60	19,38	32,78
5	0,96	45	15,00	85,00	43,2	41,47	39,81	38,22	20,59	53,38
6	1,13	21	7,00	92,00	23,73	26,81	30,30	34,24	15,67	69,05
7	1,30	18	6,00	98,00	23,4	30,42	39,55	51,41	20,45	89,50
8	1,47	5	1,67	99,00	7,35	10,80	15,88	23,35	8,22	97,72
9	1,64	1	0,33	86,67	1,64	2,69	4,41	7,23	2,28	100,00

Σ	300	100,00	589,33	235,3	203,62	193,33	199,51	100	457,67
d_{in}	0,78433		d_{sn}	0,82385		d_{vn}	0,11111		
d_{sl}	0,86535		d_{vs}	0,94949		d_{wm}	1,03197		

Formula 3 Setelah uji stabilitas

Kelas	D	N	%n	%n _{kml}	nd	nd ²	nd ³	nd ⁴	%nd ³	%nd ³ _{kumul}
1	0,39	34	11,33	11,33	13,09	5,04	1,94	0,75	2,09	2,09
2	0,51	94	31,33	42,67	47,47	23,97	12,11	6,11	13,02	15,11
3	0,63	68	22,67	65,33	42,5	26,56	16,60	10,38	17,86	32,97
4	0,75	52	17,33	82,67	38,74	28,86	21,50	16,02	23,13	56,10
5	0,87	40	13,33	96,00	34,6	29,93	25,89	22,39	27,85	83,96
6	0,99	6	2,00	98,00	5,91	5,82	5,73	5,65	6,17	90,12
7	1,11	5	1,67	99,67	5,525	6,11	6,75	7,45	7,26	97,38
8	1,23	0	0,00	88,33	0	0,00	0,00	0,00	0,00	97,38
9	1,35	1	0,33	57,33	1,345	1,81	2,43	3,27	2,62	100,00
Σ		300	100,00	641,33	189,18	128,10	92,95	72,02	100	575,12
d_{in}	0,63060		d_{sn}	0,65345		d_{vn}	0,11111			
d_{sl}	0,67713		d_{vs}	0,72561		d_{wm}	0,77486			

Formula 4 Sebelum uji stabilitas

Kelas	D	N	%n	%n _{kml}	nd	nd ²	nd ³	nd ⁴	%nd ³	%nd ³ _{kumul}
1	0,32	22	7,33	7,33	6,93	2,18	0,69	0,22	1,37	1,37
2	0,42	97	32,33	39,67	40,255	16,71	6,93	2,88	13,76	15,13
3	0,52	100	33,33	73,00	51,5	26,52	13,66	7,03	27,12	42,25
4	0,62	47	15,67	88,67	28,905	17,78	10,93	6,72	21,70	63,95
5	0,72	19	6,33	95,00	13,585	9,71	6,94	4,97	13,79	77,74
6	0,82	8	2,67	97,67	6,52	5,31	4,33	3,53	8,60	86,34
7	0,92	4	1,33	99,00	3,66	3,35	3,06	2,80	6,08	92,42
8	1,02	1	0,33	92,00	1,015	1,03	1,05	1,06	2,08	94,50
9	1,12	2	0,67	60,33	2,23	2,49	2,77	3,09	5,50	100,00
Σ		300	100,00	652,67	154,6	85,08	50,37	32,30	100	573,68
d_{in}	0,51533		d_{sn}	0,53254		d_{vn}	0,11111			
d_{sl}	0,55033		d_{vs}	0,59203		d_{wm}	0,64132			

Formula 4 setelah uji stabilitas

Kelas	D	N	%n	%n _{kml}	nd	nd ²	nd ³	nd ⁴	%nd ³	%nd ³ _{kumul}
1	0,34	9	3,00	3,00	3,015	1,01	0,34	0,11	0,39	0,39
2	0,46	57	19,00	22,00	25,935	11,80	5,37	2,44	6,19	6,58
3	0,58	101	33,67	55,67	58,075	33,39	19,20	11,04	22,14	28,72
4	0,70	85	28,33	84,00	59,075	41,06	28,53	19,83	32,91	61,63
5	0,82	32	10,67	94,67	26,08	21,26	17,32	14,12	19,98	81,61
6	0,94	12	4,00	98,67	11,22	10,49	9,81	9,17	11,31	92,92
7	1,06	2	0,67	99,33	2,11	2,23	2,35	2,48	2,71	95,62
8	1,18	1	0,33	96,67	1,175	1,38	1,62	1,91	1,87	97,50
9	1,30	1	0,33	78,00	1,295	1,68	2,17	2,81	2,50	100,00
Σ		300	100,00	632,00	187,98	124,29	86,72	63,91	100	564,97
d_{in}		0,62660		d_{sn}	0,64366		d_{vn}	0,11111		
d_{sl}		0,66119		d_{vs}	0,69770		d_{wm}	0,73704		

Lampiran 3. Data Hasil Analisis Statistika

Lampiran 3.1 Pengukuran Viskositas

Pengukuran Viskositas Sebelum Uji Stabilitas

Tests of Normality

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Viskositas Sebelum	Formula 1	,175	3	.	1,000	3	1,000
	Formula 2	,175	3	.	1,000	3	1,000
	Formula 3	,253	3	.	,964	3	,637
	Formula 4	,196	3	.	,996	3	,878

a. Lilliefors Significance Correction

ANOVA

Viskositas Sebelum

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	45053333,333	3	15017777,778	11,856	,003
Within Groups	10133333,333	8	1266666,667		
Total	55186666,667	11			

Homogenitas

Viskositas

Tukey HSD^a

Formula	N	Subset for alpha = 0.05	
		1	2
Formula 1	3	14,0000	
Formula 2	3		18,0000
Formula 3	3		19,6667
Formula 4	3		20,1667
Sig.		1,000	,305

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Post Hoc Test

Multiple Comparisons

Dependent Variable: Viskositas Sebelum

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
	Formula 2	-3200,000*	918,937	,034	-6142,76	-257,24
Formula 1	Formula 3	-4533,333*	918,937	,005	-7476,09	-1590,57
	Formula 4	-4933,333*	918,937	,003	-7876,09	-1990,57
	Formula 1	3200,000*	918,937	,034	257,24	6142,76
Formula 2	Formula 3	-1333,333	918,937	,506	-4276,09	1609,43
	Formula 4	-1733,333	918,937	,305	-4676,09	1209,43
	Formula 1	4533,333*	918,937	,005	1590,57	7476,09
Formula 3	Formula 2	1333,333	918,937	,506	-1609,43	4276,09
	Formula 4	-400,000	918,937	,971	-3342,76	2542,76
	Formula 1	4933,333*	918,937	,003	1990,57	7876,09
Formula 4	Formula 2	1733,333	918,937	,305	-1209,43	4676,09
	Formula 3	400,000	918,937	,971	-2542,76	3342,76

*. The mean difference is significant at the 0.05 level.

Pengukuran Viskositas Setelah Uji Stabilitas

Tests of Normality

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Viskositas setelah	Formula 1	,253	3	.	,964	3	,637
	Formula 2	,385	3	.	,750	3	,000
	Formula 3	,328	3	.	,871	3	,298
	Formula 4	,385	3	.	,750	3	,000

a. Lilliefors Significance Correction

	Equal	2,880	,16	-5,516	4	,005	-	821,92	-	-
	variances		5				4533,33	2	6815,3	2251,
Viskositas	assumed						3		54	312
setelah	Equal			-5,516	2,859	,013	-	821,92	-	-
	variances not						4533,33	2	7223,3	1843,
	assumed						3		41	325

Formula 1 & 4 (Mann-whitney U Test)

Test Statistics^a

	Viskositas setelah
Mann-Whitney U	,000
Wilcoxon W	6,000
Z	-1,993
Asymp. Sig. (2-tailed)	,046
Exact Sig. [2*(1-tailed Sig.)]	,100 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Formula 2 & 3 (Mann-whitney U Test)

Test Statistics^a

	Viskositas setelah
Mann-Whitney U	2,000
Wilcoxon W	8,000
Z	-1,159
Asymp. Sig. (2-tailed)	,246
Exact Sig. [2*(1-tailed Sig.)]	,400 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Formula 2 & 4 (Independent t test)

Test Statistics^a

	Viskositas setelah
Mann-Whitney U	,000

Wilcoxon W	6,000
Z	-2,023
Asymp. Sig. (2-tailed)	,043
Exact Sig. [2*(1-tailed Sig.)]	,100 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Formula 3 & 4 (Mann-whitney U Test)

	Viskositas setelah
Mann-Whitney U	4,500
Wilcoxon W	10,500
Z	,000
Asymp. Sig. (2-tailed)	1,000
Exact Sig. [2*(1-tailed Sig.)]	1,000 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Pengukuran Viskositas Perbandingan Sebelum Uji Stabilitas dan Setelah Uji Stabilitas

Formula 1
Uji Normalitas

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Sebelum	Formula 1	,175	3	.	1,000	3	1,000
Setelah	Formula 1	,253	3	.	,964	3	,637

a. Lilliefors Significance Correction

Paired samples test

Paired Samples Test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Sebelum – Setelah	-133,33333	923,76043	533,33333	-2428,08146	2161,41479	-,250	2	,826

Formula 2
Uji Normalitas

Tests of Normality

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Sebelum	Formula 2	,175	3	.	1,000	3	1,000
Setelah	Formula 2	,385	3	.	,750	3	,000

a. Lilliefors Significance Correction

Wilcoxon Signed Ranks Test

Test Statistics^a

	Setelah – Sebelum
Z	-,577 ^b
Asymp. Sig. (2-tailed)	,564

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Formula 3
Uji Normalitas

Tests of Normality

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Sebelum	Formula 3	,253	3	.	,964	3	,637
Setelah	Formula 3	,328	3	.	,871	3	,298

a. Lilliefors Significance Correction

Paired samples test

Paired Samples Test

	Paired Differences	t	df	Sig. (2-tailed)					
					Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	
								Lower	Upper
Pair 1 Sebelum – Setelah	-133,33333 611,01009 352,76684 -1651,16655 1384,49988	-,378	2	,742					

Formula 4
Uji Normalitas

Tests of Normality

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Sebelum	Formula 4	,196	3	.	,996	3	,878
Setelah	Formula 4	,385	3	.	,750	3	,000

a. Lilliefors Significance Correction

Wilcoxon Signed Ranks Test

Test Statistics^a

	Setelah – Sebelum
Z	-,447 ^b
Asymp. Sig. (2-tailed)	,655

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Lampiran 3.2 Pengukuran pH
Pengukuran pH Sebelum Uji Stabilitas
Uji Normalitas

Tests of Normality

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
pH Sebelum	Formula 1	,385	3	.	,750	3	,000
	Formula 2	,253	3	.	,964	3	,637
	Formula 3	,385	3	.	,750	3	,000

Formula 4	,276	3	.	,942	3	,537
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a. Lilliefors Significance Correction

Kruskal Wallis Test

Test Statistics^{a,b}

	pH
Chi-Square	10,077
Df	3
Asymp. Sig.	,018

a. Kruskal Wallis Test

b. Grouping Variable: Formula

Formula 1 & 2 (Mann-whitney U Test)

Test Statistics^a

	pH
Mann-Whitney U	,500
Wilcoxon W	6,500
Z	-1,798
Asymp. Sig. (2-tailed)	,072
Exact Sig. [2*(1-tailed Sig.)]	,100 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Formula 1 & 3 (Mann-whitney U Test)

Test Statistics^a

	pH Sebelum
Mann-Whitney U	,000
Wilcoxon W	6,000
Z	-2,023
Asymp. Sig. (2-tailed)	,043
Exact Sig. [2*(1-tailed Sig.)]	,100 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Formula 1 & 4 (Mann-whitney U Test)

Test Statistics^a

	pH
Mann-Whitney U	,000
Wilcoxon W	6,000
Z	-1,993
Asymp. Sig. (2-tailed)	,046
Exact Sig. [2*(1-tailed Sig.)]	,100 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Formula 2 & 3 (Mann-whitney U Test)

Test Statistics^a

	pH
Mann-Whitney U	,500
Wilcoxon W	6,500
Z	-1,798
Asymp. Sig. (2-tailed)	,072
Exact Sig. [2*(1-tailed Sig.)]	,100 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Formula 2 & 4 (Independent samples test)

Independent Samples Test

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2- tailed)	Mean Differenc e	Std. Error Differen ce	95% Confidence Interval of the Difference	
									Lower	Upper
pH	Equal variances assumed	2,579	,184	5,013	4	,007	,11333	,02261	,05056	,17610
	Equal variances not assumed			5,013	2,696	,020	,11333	,02261	,03656	,19010

Formula 3 & 4 (Mann-whitney U Test)

Test Statistics ^a	
	pH
Mann-Whitney U	,000
Wilcoxon W	6,000
Z	-1,993
Asymp. Sig. (2-tailed)	,046
Exact Sig. [2*(1-tailed Sig.)]	,100 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Pengukuran pH Setelah Uji Stabilitas

Uji Normalitas

Tests of Normality							
	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
pH Setelah	Formula 1	,385	3	.	,750	3	,000
	Formula 2	,253	3	.	,964	3	,637
	Formula 3	,385	3	.	,750	3	,000
	Formula 4	,385	3	.	,750	3	,000

a. Lilliefors Significance Correction

Kruskal Wallis Test

Test Statistics ^{a,b}	
	pH Setelah
Chi-Square	8,938
Df	3
Asymp. Sig.	,030

a. Kruskal Wallis Test

b. Grouping Variable: Formula

Formula 1 & 2 (Mann-whitney U Test)

Test Statistics ^a	
	pH Setelah
Mann-Whitney U	2,500
Wilcoxon W	8,500

Z	-,899
Asymp. Sig. (2-tailed)	,369
Exact Sig. [2*(1-tailed Sig.)]	,400 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Formula 1 & 3 (Mann-whitney U Test)

Test Statistics ^a	
	pH Setelah
Mann-Whitney U	,000
Wilcoxon W	6,000
Z	-2,023
Asymp. Sig. (2-tailed)	,043
Exact Sig. [2*(1-tailed Sig.)]	,100 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Formula 1 & 4 (Mann-whitney U Test)

Test Statistics ^a	
	pH Setelah
Mann-Whitney U	,000
Wilcoxon W	6,000
Z	-2,023
Asymp. Sig. (2-tailed)	,043
Exact Sig. [2*(1-tailed Sig.)]	,100 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Formula 2 & 3 (Mann-whitney U Test)

Test Statistics ^a	
	pH Setelah
Mann-Whitney U	1,500
Wilcoxon W	7,500
Z	-1,348
Asymp. Sig. (2-tailed)	,178
Exact Sig. [2*(1-tailed Sig.)]	,200 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Formula 2 & 4 (Mann-whitney U Test)

	pH Setelah
Mann-Whitney U	,000
Wilcoxon W	6,000
Z	-1,993
Asymp. Sig. (2-tailed)	,046
Exact Sig. [2*(1-tailed Sig.)]	,100 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Formula 3 &4 (Independent samples test)

	pH Setelah
Mann-Whitney U	,000
Wilcoxon W	6,000
Z	-2,023
Asymp. Sig. (2-tailed)	,043
Exact Sig. [2*(1-tailed Sig.)]	,100 ^b

a. Grouping Variable: Formula

b. Not corrected for ties.

Pengukuran pH Perbandingan Sebelum Uji Stabilitas dan Setelah Uji Stabilitas

Formula 1

Uji Normalitas

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Sebelum	Formula 1	,385	3	.	,750	3	,000
Setelah	Formula 1	,385	3	.	,750	3	,000

a. Lilliefors Significance Correction

Wilcoxon Signed Ranks Test

Test Statistics^a

	Setelah – Sebelum
Z	-1,414 ^b
Asymp. Sig. (2-tailed)	,157

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Formula 2 Uji Normalitas

Tests of Normality

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Sebelum	Formula 2	,253	3	.	,964	3	,637
Setelah	Formula 2	,253	3	.	,964	3	,637

a. Lilliefors Significance Correction

Paired samples test

Paired Samples Test

	Paired Differences	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		T	df	Sig. (2-tailed)
					Lower	Upper			
					Pair 1	Sebelum – Setelah			

Formula 3 Uji Normalitas

Tests of Normality

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Sebelum	Formula 3	,385	3	.	,750	3	,000
Setelah	Formula 3	,385	3	.	,750	3	,000

a. Lilliefors Significance Correction

Wilcoxon Signed Ranks Test

	Setelah – Sebelum
Z	-1,000 ^b
Asymp. Sig. (2-tailed)	,317

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Formula 4 Uji Normalitas

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Sebelum	Formula 4	,276	3	.	,942	3	,537
Setelah	Formula 4	,385	3	.	,750	3	,000

a. Lilliefors Significance Correction

Wilcoxon Signed Ranks Test

	Setelah – Sebelum
Z	,000 ^b
Asymp. Sig. (2-tailed)	1,000

a. Wilcoxon Signed Ranks Test

b. The sum of negative ranks equals the sum of positive ranks.

Lampiran 3.3 Distribusi Ukuran Partikel Pengukuran Distribusi Ukuran Partikel Sebelum Uji Stabilitas Uji Normalitas

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Distribusi Ukuran Partikel Sebelum	Formula 1	,055	300	,027	,972	300	,000
	Formula 2	,065	300	,004	,979	300	,000
	Formula 3	,102	300	,000	,950	300	,000

	Formula 4	,114	300	,000	,916	300	,000
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a. Lilliefors Significance Correction

Kruskal wallis test

Test Statistics^{a,b}

	Distribusi Ukuran Partikel Sebelum
Chi-Square	706,564
Df	3
Asymp. Sig.	,000

a. Kruskal Wallis Test

b. Grouping Variable: Formula

Formula 1 & 2 (Mann-Whitney U)

Test Statistics^a

	Distribusi Ukuran Partikel Sebelum
Mann-Whitney U	23138,000
Wilcoxon W	68288,000
Z	-10,298
Asymp. Sig. (2-tailed)	,000

a. Grouping Variable: Formula

Formula 1 & 3 (Mann-Whitney U)

Test Statistics^a

	Distribusi Ukuran Partikel Sebelum
Mann-Whitney U	12748,500
Wilcoxon W	57898,500
Z	-15,192
Asymp. Sig. (2-tailed)	,000

a. Grouping Variable: Formula

Formula 1 & 4 (Mann-Whitney U)

Test Statistics^a

	Distribusi Ukuran Partikel Sebelum
Mann-Whitney U	1263,500
Wilcoxon W	46413,500
Z	-20,602
Asymp. Sig. (2-tailed)	,000

a. Grouping Variable: Formula

Formula 2 & 3 (Mann-Whitney U)

Test Statistics^a

	Distribusi Ukuran Partikel Sebelum
Mann-Whitney U	24848,500
Wilcoxon W	69998,500
Z	-9,493
Asymp. Sig. (2-tailed)	,000

a. Grouping Variable: Formula

Formula 2 & 4 (Mann-Whitney U)

Test Statistics^a

	Distribusi Ukuran Partikel Sebelum
Mann-Whitney U	3144,500
Wilcoxon W	48294,500
Z	-19,717
Asymp. Sig. (2-tailed)	,000

a. Grouping Variable: Formula

Formula 3 & 4 (Mann-Whitney U)

	Distribusi Ukuran Partikel Sebelum
Mann-Whitney U	12875,500
Wilcoxon W	58025,500
Z	-15,134
Asymp. Sig. (2-tailed)	,000

a. Grouping Variable: Formula

Pengukuran Distribusi Ukuran Partikel Setelah Uji Stabilitas

Uji Normalitas

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	Df	Sig.
Distribusi Ukuran Partikel Setelah	Formula 1	,078	300	,000	,970	300	,000
	Formula 2	,086	300	,000	,962	300	,000
	Formula 3	,095	300	,000	,962	300	,000
	Formula 4	,068	300	,002	,969	300	,000

a. Lilliefors Significance Correction

Kruskal wallis test

	Distribusi Ukuran Partikel Setelah
Chi-Square	340,023
Df	3
Asymp. Sig.	,000

a. Kruskal Wallis Test

b. Grouping Variable: Formula

Formula 1 & 2 (Mann-Whitney U)

Test Statistics^a

	Distribusi Ukuran Partikel Setelah
Mann-Whitney U	27548,500
Wilcoxon W	72698,500
Z	-8,221
Asymp. Sig. (2-tailed)	,000

a. Grouping Variable: Formula

Formula 1 & 3 (Mann-Whitney U)

Test Statistics^a

	Distribusi Ukuran Partikel Setelah
Mann-Whitney U	14204,000
Wilcoxon W	59354,000
Z	-14,507
Asymp. Sig. (2-tailed)	,000

a. Grouping Variable: Formula

Formula 1 & 4 (Mann-Whitney U)

Test Statistics^a

	Distribusi Ukuran Partikel Setelah
Mann-Whitney U	12817,500
Wilcoxon W	57967,500
Z	-15,160
Asymp. Sig. (2-tailed)	,000

a. Grouping Variable: Formula

Formula 2 & 3 (Mann-Whitney U)

Test Statistics^a

	Distribusi Ukuran Partikel Setelah
Mann-Whitney U	25898,000
Wilcoxon W	71048,000
Z	-8,999
Asymp. Sig. (2-tailed)	,000

a. Grouping Variable: Formula

Formula 2 & 4 (Mann-Whitney U)

Test Statistics^a

	Distribusi Ukuran Partikel Setelah
Mann-Whitney U	24349,000
Wilcoxon W	69499,000
Z	-9,729
Asymp. Sig. (2-tailed)	,000

a. Grouping Variable: Formula

Formula 3 & 4 (Mann-Whitney U)

Test Statistics^a

	Distribusi Ukuran Partikel Setelah
Mann-Whitney U	44922,500
Wilcoxon W	90072,500
Z	-,037
Asymp. Sig. (2-tailed)	,971

a. Grouping Variable: Formula

Pengukuran Distribusi Ukuran Partikel Perbandingan Sebelum Uji

Stabilitas dan Setelah Uji Stabilitas

Formula 1

Uji Normalitas

Tests of Normality							
	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Sebelum	Formula 1	,055	300	,027	,972	300	,000
Setelah	Formula 1	,078	300	,000	,970	300	,000

a. Lilliefors Significance Correction

Wilcoxon Signed Ranks Test

Test Statistics ^a	
	Setelah – Sebelum
Z	-15,024 ^b
Asymp. Sig. (2-tailed)	,000

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Formula 2

Uji Normalitas

Tests of Normality							
	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Sebelum	Formula 2	,065	300	,004	,979	300	,000
Setelah	Formula 2	,086	300	,000	,962	300	,000

a. Lilliefors Significance Correction

Wilcoxon Signed Ranks Test

Test Statistics ^a	
	Setelah – Sebelum
Z	-14,859 ^b

Asymp. Sig. (2-tailed)	,000
------------------------	------

- Wilcoxon Signed Ranks Test
- Based on positive ranks.

Formula 3 Uji Normalitas

Tests of Normality							
	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Sebelum	Formula 3	,102	300	,000	,950	300	,000
Setelah	Formula 3	,095	300	,000	,962	300	,000

- Lilliefors Significance Correction

Wilcoxon Signed Ranks Test

Test Statistics ^a	
	Setelah – Sebelum
Z	-14,924 ^b
Asymp. Sig. (2-tailed)	,000

- Wilcoxon Signed Ranks Test
- Based on positive ranks.

Formula 4 Uji Normalitas

Tests of Normality							
	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Sebelum	Formula 4	,114	300	,000	,916	300	,000
Setelah	Formula 4	,068	300	,002	,969	300	,000

- Lilliefors Significance Correction

Wilcoxon Signed Ranks Test

Test Statistics^a

	Setelah – Sebelum
Z	-15,042 ^b
Asymp. Sig. (2-tailed)	,000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Lampiran 4. Dokumentasi Penelitian



Gambar 16. Proses pencampuran fase air dan fase minyak



Gambar 17. Pengukuran viskositas sediaan krim



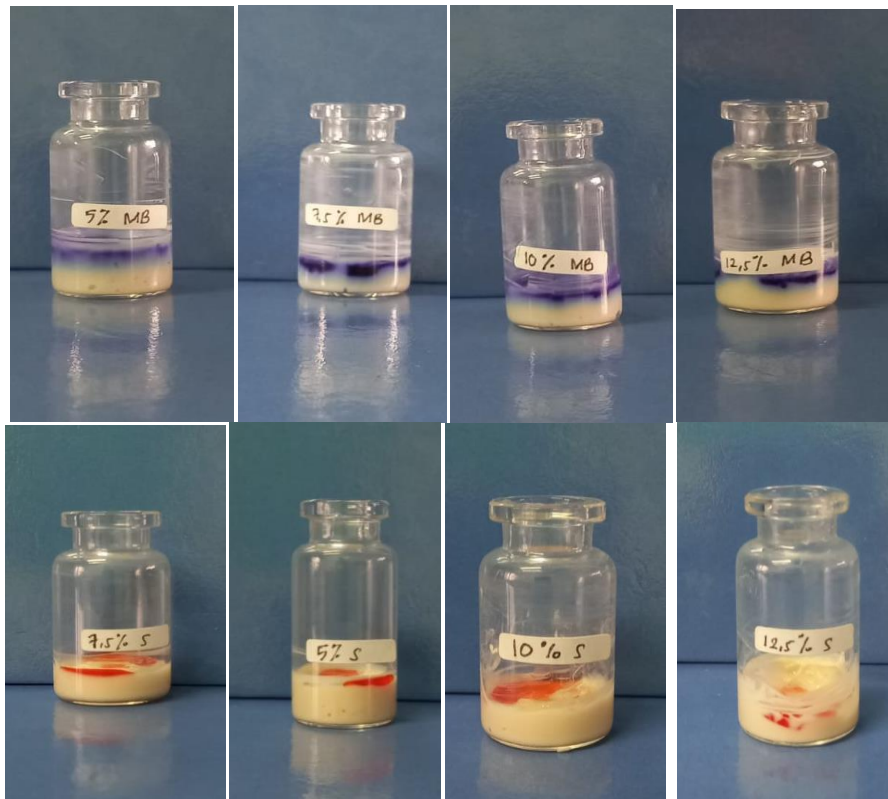
Gambar 18 Pengukuran pH sediaan krim



Gambar 19. Pengukuran distribusi ukuran partikel menggunakan mikroskop



Gambar 20. Pengujian sentrifugasi sediaan krim



Gambar 21. Pengujian tipe emulsi metode pewarnaan



Gambar 22. Pengujian tipe emulsi metode pengenceran