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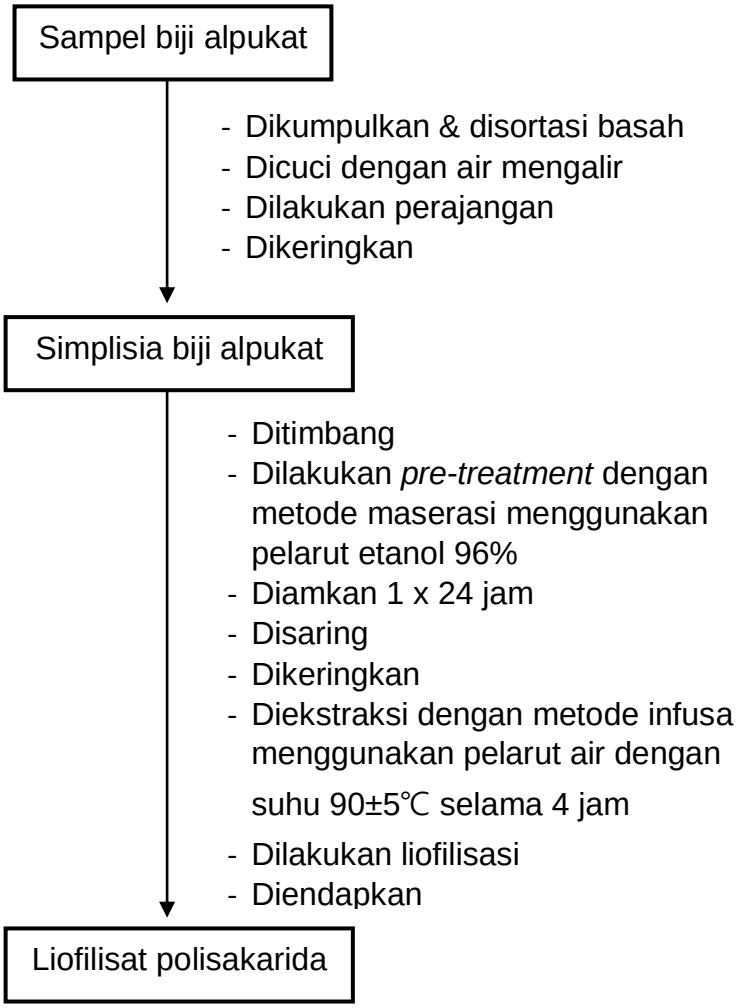
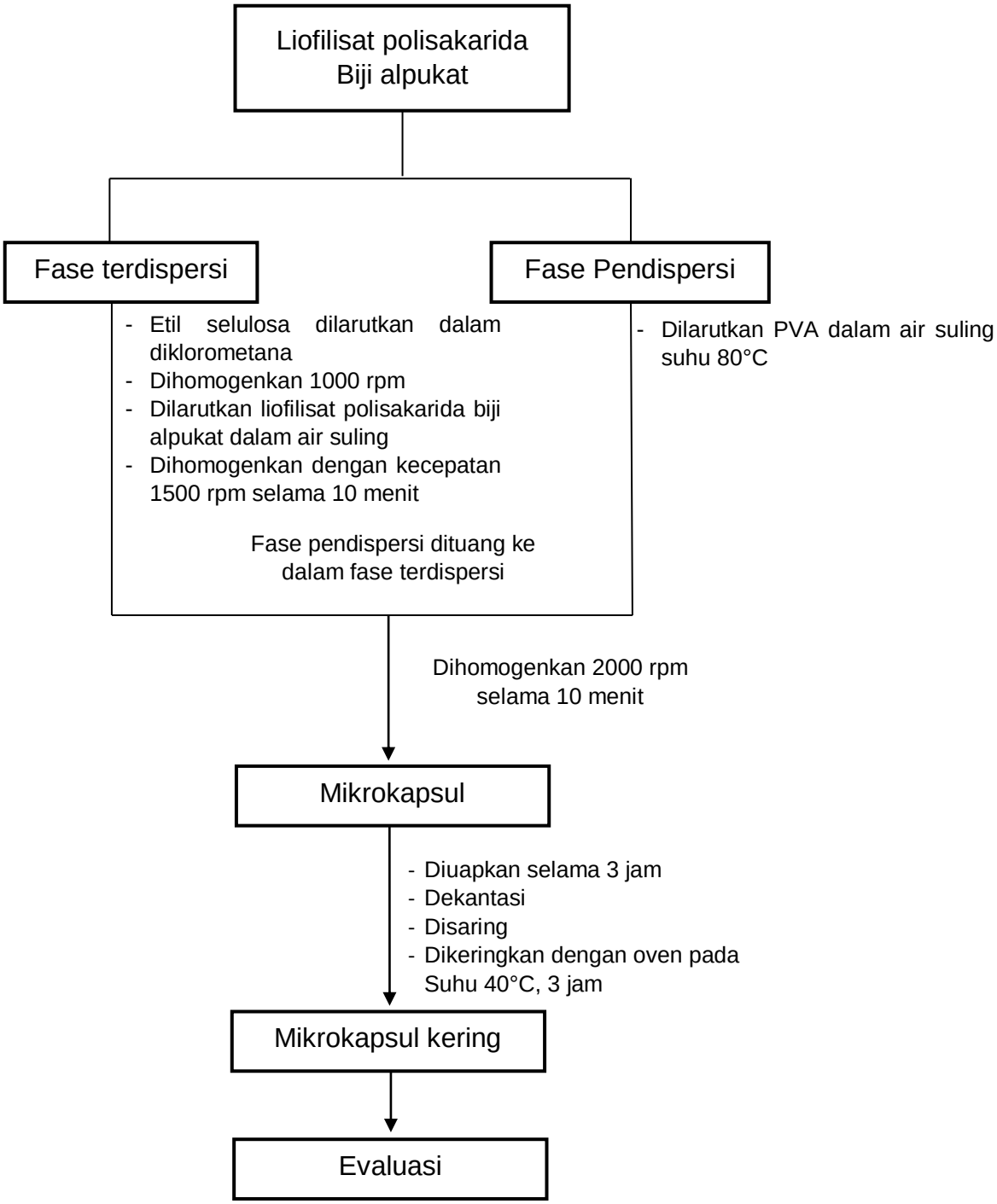
LAMPIRAN

Lampiran 1. Skema Kerja Penelitian

Pembuatan liofilisat polisakarida biji alpukat



Pembuatan Mikrokapsul



Lampiran 2. Hasil Evaluasi Mikrokapsul

Tabel 4. Distribusi ukuran dan besaran partikel rata-rata mikrokapsul formula I

Range Ukuran Partikel	Rata-rata dari range ukuran (d)	Jumlah (n)	n.d
52 – 64,9	58,45	6	350,70
64,9 – 77,8	71,35	23	1641,05
77,8 – 90,7	84,25	34	2864,50
90,7 – 103,6	97,15	63	6120,45
103,6 – 116,5	110,05	67	7373,35
116,5 – 129,4	122,95	54	6639,30
129,4 – 142,3	135,85	28	3803,80
142,3 – 155,2	148,75	16	2380
155,2 – 168,1	161,65	6	969,90
168,1 – 181	174,55	3	523,65
Jumlah		300	32666,70

$$D_{rata\text{-}rata}=\frac{\Sigma nd}{\Sigma n}=\frac{32666,70}{300}=108,89\ \mu m$$

Tabel 5. Distribusi ukuran dan besaran partikel rata-rata mikrokapsul formula II

Range Ukuran Partikel	Rata-rata dari range ukuran (d)	Jumlah (n)	n.d
55 – 72,3	63,65	7	445,55
72,3 – 89,6	80,95	32	2590,4
89,6 – 106,9	98,24	80	7860
106,9 – 124,2	115,55	81	9359,55
124,2 – 141,5	132,85	48	6376,8
141,5 – 158,8	150,15	24	3603,6
158,8 – 176,1	167,45	13	2176,85
176,1 – 193,4	184,75	8	1478
193,4 – 210,7	202,05	4	808,2
210,7 – 228	219,35	3	658,05
Jumlah		300	35357

$$D_{rata\text{-}rata}=\frac{\Sigma nd}{\Sigma n}=\frac{35357}{300}=117,85\ \mu m$$

Tabel 6. Distribusi ukuran dan besaran partikel rata-rata mikrokapsul formula III

Range Ukuran Partikel	Rata-rata dari range ukuran (d)	Jumlah (n)	n.d
76 – 91,1	83,55	11	919,05
91,1 – 106,2	98,65	50	4932,50
106,2 – 121,3	113,75	77	8758,75
121,3 – 136,4	128,85	84	10823,40
136,4 – 151,5	143,95	40	5758
151,5 – 166,6	159,05	18	2862,9
166,6 – 181,7	174,15	5	870,75
181,7 – 196,8	189,25	7	1324,75
196,8 – 211,9	204,35	3	613,05
211,9 – 227	219,45	5	1097,25
Jumlah		300	37960,40

$$D_{rata\text{-}rata}=\frac{\Sigma nd}{\Sigma n}=\frac{37960,40}{300}=126,53\ \mu m$$

Tabel 7. Distribusi ukuran dan besaran partikel rata-rata mikrokapsul formula IV

Range Ukuran Partikel	Rata-rata dari range ukuran (d)	Jumlah (n)	n.d
65 – 94,9	79,95	8	639,60
94,9 – 124,8	109,85	52	5712,2
124,8 – 154,7	139,75	121	16909,75
154,7 – 184,6	169, 65	87	14759,55
184,6 – 214,5	199,55	20	3991
214,5 – 244,4	229,45	6	1376,7
244,4 – 274,3	259,35	3	778,05
274,3 – 304,2	289,25	0	0
304,2 – 334,1	319,15	1	319,15
334,1 – 364	349,05	2	698,10
Jumlah		300	45184,10

$$D_{rata\text{-}rata}=\frac{\Sigma nd}{\Sigma n}=\frac{45184,10}{300}=150,61\ \mu m$$

Tabel 8. Data absorbansi kurva kalibrasi glukosa

Konsentrasi (bpj)	Absorbansi
2	0,1858
4	0,3883
6	0,5625
8	0,7939
10	0,9783

Persaman kurva baku glukosa

y = 0,0995x – 0,0154

a = - 0,0154

b = 0,0995

Tabel 9. Data absorbansi konsentrasi polisakarida total liofilisat

Replikasi	Absorbansi	Konsentrasi (bpj)
I	1,3895	**14,119**
II	1,4177	**14,403**
III	1,4471	**14,698**
Rata-rata	1,4181	**14,407**

Contoh perhitungan data konsentrasi kadar polisakarida total liofilisat:

$$x = \frac{y - a}{b} \longrightarrow x = \frac{1,3895 + 0,0154}{0,0995}$$

$$= \frac{1,4049}{0,0995}$$

= **14,119**µg/ml

Tabel 10. Data persentase kadar polisakarida dalam liofilisat

Replikasi	Konsentrasi (bpj)	Volume akhir (ml)	Faktor Pengenceran	Bobot sampel (mg)	Kadar (%b/b)
I	14,119	7	7	100	**0,69**
II	14,403	7	7	100	**0,71**
III	14,698	7	7	100	**0,72**
Rata-rata	14,407	7	7	100	**0,71**

Contoh perhitungan persentase kadar polisakarida dalam liofilisat:

$$\%\ b/b = \frac{\text{Konsentrasi} \times \text{Faktor Pengenceran} \times \text{Volume akhir}}{\text{Bobot sampel}} \times 100\%$$

$$= \frac{14{,}119\ \mu g/ml \times 7 \times 7\ ml}{100\ mg} \times 100\%$$

$$= \frac{691{,}831\ \mu g}{100\ mg} \times 100\%$$

$$= \mathbf{0{,}69\%}$$

Tabel 11. Data kadar polisakarida yang tidak terjerapoleh mikrokapsul

Formula	Absorbansi	Rata-rata	Konsentrasi (bpj)	Kadar polisakarida (mg)
Formula I	0,33699	0,3624	3,797	**0,42**
	0,33952			
	0,41083			
Formula II	0,37993	0,2875	3,044	**0,33**
	0,24503			
	0,23766			
Formula III	0,28054	0,2198	2,634	**0,26**
	0,18802			
	0,19083			
Formula IV	0,20452	0,1983	2,148	**0,24**
	0,19659			
	0,1939			

Contoh perhitungan persentase kadar polisakarida yang tidak terjerap

$$x = \frac{y - a}{b} \longrightarrow x = \frac{0{,}3624 + 0{,}0154}{0{,}0995}$$

$$= \frac{0{,}3778}{0{,}0995}$$

= 3,797µg/ml x 110 ml (total volume tiap formula mikrokapsul)

= 417,67 µg

= 0,42 mg

Tabel 12. Data persentase efisiensi penjerapan mikrokapsul

Formula	Kadar polisakarida yang tidak terjerap (mg)	% EE
Formula I	0,42	**40,84**
Formula II	0,33	**53,52**
Formula III	0,26	**63,38**
Formula IV	0,24	**66,19**

Contoh perhitungan persentase efisiensi penjerapan mikrokapsul

$$\% EE = \frac{TD - FD}{TD} \times 100\%$$

$$= \frac{0{,}71 - 0{,}42}{0{,}71} \times 100\%$$

$$= \frac{0{,}29}{0{,}71} \times 100\%$$

= **40,84 %**

Keterangan:

EE = Efisiensipenjerapan

TD = Total polisakaridadalamliofilisat

FD = Total polisakarida yang tidakterjerap

Lampiran 3. Hasil Analisis *One Way Anova*

Oneway

Descriptives

Efisiensi Penjerapan

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Formula I	3	41.3133	6.50674	3.75667	25.1497	57.4770	33.80	45.07
Formula II	3	52.5767	12.62614	7.28971	21.2116	83.9417	38.02	60.56
Formula III	3	63.8467	8.94316	5.16333	41.6306	86.0627	53.52	69.01
Formula IV	3	67.1300	.81406	.47000	65.1078	69.1522	66.19	67.60
Total	12	56.2167	12.80209	3.69565	48.0826	64.3507	33.80	69.01

Test of Homogeneity of Variances

Efisiensi Penjerapan

Levene Statistic	df1	df2	Sig.
5.477	3	8	.024

ANOVA

Efisiensi Penjerapan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1238.030	3	412.677	5.845	.021
Within Groups	564.800	8	70.600		
Total	1802.830	11			

Nilai p < 0.05

Gambar 8. Analisis Statistik secara ANOVA