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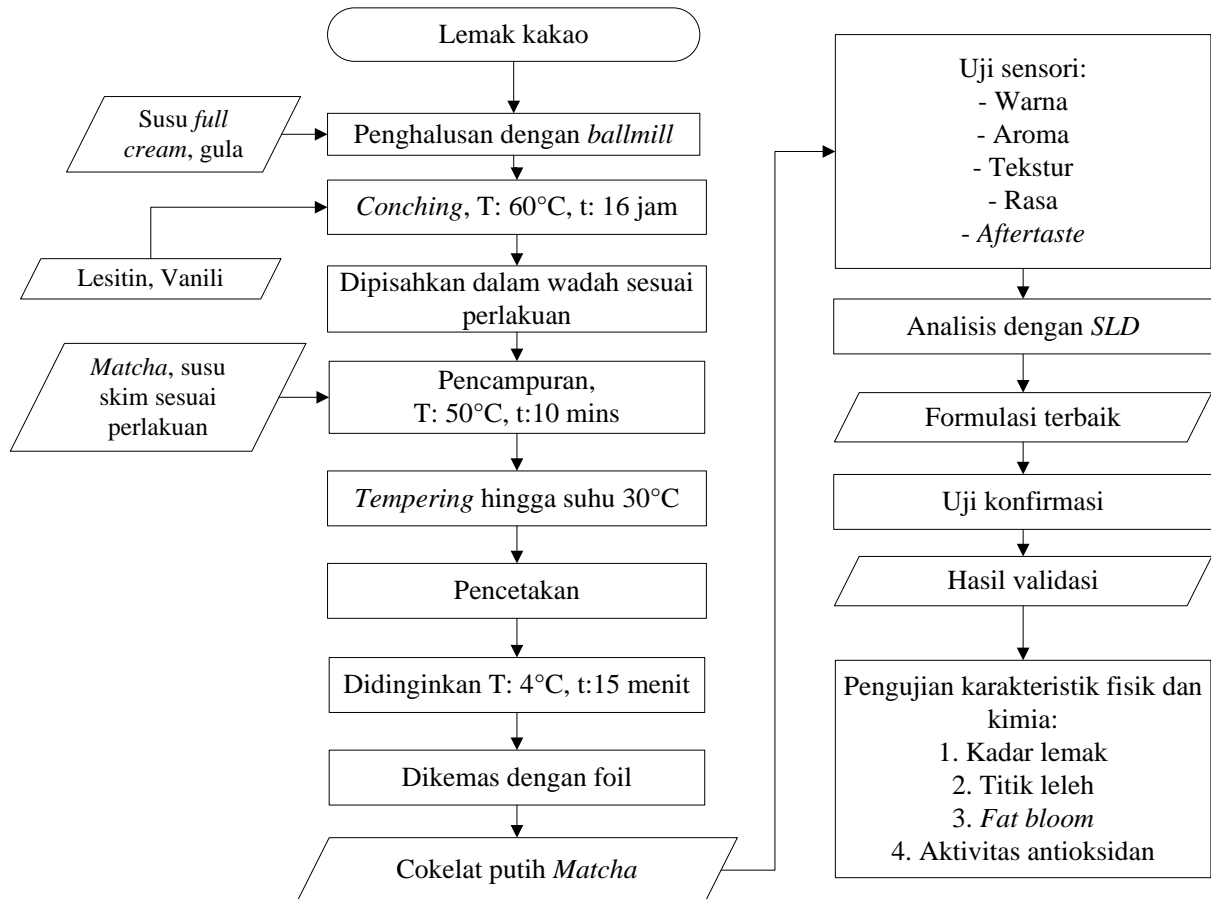
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## LAMPIRAN

Lampiran 1. Diagram Alir Penelitian



## Lampiran 2. Dokumentasi Penelitian

a. Pembuatan cokelat *matcha*

Pencampuran bahan

Mixing menggunakan *ball mill**Conching*

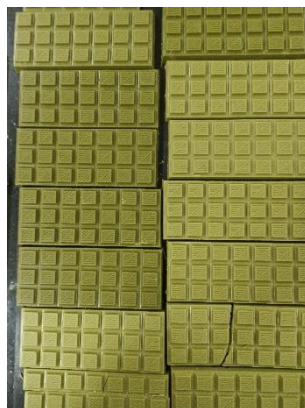
Penambahan susu skim

Penambahan *matcha*

Tempering



Pendinginan

Hasil cokelat *matcha*

Pengemasan

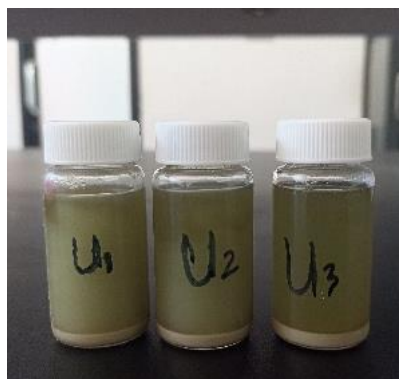
## b. Pengujian parameter



Pengujian organoleptik



Pengujian kadar lemak



Pengujian titik leleh



Pengamatan fat bloom







Pengujian aktivitas antioksidan



## Lampiran 3. Analisis data menggunakan SLD

a. Hasil pengujian organoleptik pada produk Cokelat *Matcha*

		Component 1	Component 2	Response 1	Response 2	Response 3	Response 4	Response 5
Std	Run	A:Susu skim	B:Matcha	Warna	Aroma	Tekstur	Rasa	Aftertaste
		%	%					
6	1	13	2	3.675	3.775	3.95	4.15	4
4	2	12	3	4.075	3.75	3.95	3.975	3.7
8	3	11	4	4.125	3.957	4.025	4.025	3.875
1	4	13	2	3.7	3.875	3.975	4.25	3.95
5	5	10	5	3.925	3.75	3.65	3.775	3.55
2	6	9	6	4.025	3.825	3.75	3.45	3.125
3	7	11	4	4.025	3.825	3.9	3.875	3.575
7	8	9	6	3.775	3.775	3.75	3.4	3.25

## b. Hasil ANOVA pada parameter warna

Source	Sum of Squares	df	Mean Square	F-value	p-value	
<b>Model</b>	0.1516	2	0.0758	5.76	0.0503	not significant
<sup>(1)</sup> Linear Mixture	0.0272	1	0.0272	2.07	0.2098	
AB	0.1244	1	0.1244	9.46	0.0276	
<b>Residual</b>	0.0658	5	0.0132			
Lack of Fit	0.0292	2	0.0146	1.20	0.4144	not significant
Pure Error	0.0366	3	0.0122			
<b>Cor Total</b>	0.2174	7				

## c. Hasil ANOVA pada parameter Aroma

Source	Sum of Squares	df	Mean Square	F-value	p-value	
<b>Model</b>	0.0206	4	0.0052	1.03	0.5095	not significant
<sup>(1)</sup> Linear Mixture	0.0006	1	0.0006	0.1114	0.7605	
AB	0.0082	1	0.0082	1.65	0.2895	
AB(A-B)	0.0001	1	0.0001	0.0139	0.9135	
AB(A-B) <sup>2</sup>	0.0185	1	0.0185	3.71	0.1499	
<b>Pure Error</b>	0.0150	3	0.0050			
<b>Cor Total</b>	0.0356	7				

## d. Hasil ANOVA pada parameter Tekstur

Source	Sum of Squares	df	Mean Square	F-value	p-value	
<b>Model</b>	0.1178	4	0.0295	10.87	0.0394	significant
<sup>(1)</sup> Linear Mixture	0.0735	1	0.0735	27.13	0.0138	
AB	0.0151	1	0.0151	5.56	0.0996	
AB(A-B)	0.0167	1	0.0167	6.16	0.0891	
AB(A-B) <sup>2</sup>	0.0232	1	0.0232	8.56	0.0612	
<b>Pure Error</b>	0.0081	3	0.0027			
<b>Cor Total</b>	0.1259	7				

## e. Hasil ANOVA pada parameter Rasa

Source	Sum of Squares	df	Mean Square	F-value	p-value	
<b>Model</b>	0.6050	1	0.6050	61.79	0.0002	significant
<sup>(1)</sup> Linear Mixture	0.6050	1	0.6050	61.79	0.0002	
<b>Residual</b>	0.0587	6	0.0098			
Lack of Fit	0.0412	3	0.0137	2.36	0.2498	not significant
Pure Error	0.0175	3	0.0058			
<b>Cor Total</b>	0.6638	7				

## f. Hasil ANOVA pada parameter Aftertaste

Source	Sum of Squares	df	Mean Square	F-value	p-value	
<b>Model</b>	0.6050	1	0.6050	33.60	0.0012	significant
<sup>(1)</sup> Linear Mixture	0.6050	1	0.6050	33.60	0.0012	
<b>Residual</b>	0.1080	6	0.0180			
Lack of Fit	0.0540	3	0.0180	0.9986	0.5005	not significant
Pure Error	0.0541	3	0.0180			
<b>Cor Total</b>	0.7130	7				

## g. Uji Konfirmasi Formulasi Terbaik

Susu skim	Matcha
11.34	3.65

Warna	Aroma	Rasa	Tekstur	Aftertaste
4.35	4.15	3.95	4	3.85
4.2	3.9	3.95	3.9	3.65
4.15	4.05	4.1	3.8	3.85

## Two-sided Confidence = 95%

Analysis	Predicted Mean	Predicted Median	Std Dev	n	SE Pred	95% PI low	Data Mean	95% PI high
Warna	4.05063	4.05063	0.114694	3	0.0919446	3.81428	4.23333	4.28698
Aroma	3.86874	3.86874	0.0706211	3	0.0635843	3.66638	4.03333	4.07109
Rasa	3.92667	3.92667	0.0989529	3	0.0674869	3.76153	4	4.0918
Tekstur	4.00014	4.00014	0.0520416	3	0.0468562	3.85102	3.9	4.14926
Aftertaste	3.69229	3.69229	0.134193	3	0.0915212	3.46835	3.78333	3.91624

## Lampiran 4. Uji One-Sample T-Test SPSS 16.0

T-TEST

/TESTVAL=4.06

/MISSING=ANALYSIS

/VARIABLES=Warna

/CRITERIA=CI(.9500).

**T-Test****One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
Hasil_Warna	3	4.2333	.10408	.06009

**One-Sample Test**

	Test Value = 4.06					
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Hasil_Warna	2.884	2	.102	.17333	-.0852	.4319

T-TEST

/TESTVAL=3.88

/MISSING=ANALYSIS

/VARIABLES=Aroma

/CRITERIA=CI(.9500).

**T-Test****One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
Hasil_Aroma	3	4.0333	.12583	.07265

**One-Sample Test**

	Test Value = 3.88					
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Hasil_Aroma	2.111	2	.169	.15333	-.1592	.4659

T-TEST

/TESTVAL=3.91

/MISSING=ANALYSIS

/VARIABLES=Rasa

/CRITERIA=CI(.9500).

T-Test

**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
Hasil_Rasa	3	4.0000	.08660	.05000

**One-Sample Test**

	Test Value = 3.91					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Hasil_Rasa	1.800	2	.214	.09000	-.1251	.3051

## T-TEST

/TESTVAL=3.99  
 /MISSING=ANALYSIS  
 /VARIABLES=Tekstur  
 /CRITERIA=CI(.9500).

**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
Hasil_Tekstur	3	3.9000	.10000	.05774

**One-Sample Test**

	Test Value = 4.00					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Hasil_Tekstur	-1.732	2	.225	-.10000	-.3484	.1484

## T-TEST

/TESTVAL=3.69  
 /MISSING=ANALYSIS  
 /VARIABLES=Aftertaste  
 /CRITERIA=CI(.9500).

**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
Hasil_Aftertaste	3	3.7833	.11547	.06667

**One-Sample Test**

	Test Value = 3.69					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Hasil_Aftertaste	1.400	2	.296	.09333	-.1935	.3802

## Lampiran 5. Perhitungan Pengujian

## a. Pengujian Kadar Lemak

Ulangan	B. sampel (g)	B. cawan kosong (g)	B. sampel akhir+cawan (g)	FP	%Lemak
1	2,0021	50,4426	50,6369	4	38,8
2	2,0038	55,306	55,4992		38,5
3	2,0088	38,5443	38,7209		35,16
Rata-rata					37,4867

Ulangan 1:

$$\text{Kadar Lemak (\%)} = \frac{50,6369 - 50,4426}{2,0021} \times \frac{20}{5} \times 100\% = 38,8\%$$

Ulangan 2:

$$\text{Kadar Lemak (\%)} = \frac{55,4992 - 55,306}{2,0038} \times \frac{20}{5} \times 100\% = 38,5\%$$

Ulangan 2:

$$\text{Kadar Lemak (\%)} = \frac{38,7209 - 38,5443}{2,0088} \times \frac{20}{5} \times 100\% = 35,16\%$$

b. Hasil Pengamatan *Fat bloom*

Hari	Ulangan	Total Area (Pixel)	Area Hijau (pixel)	%	Area Putih/blooming (Pixel)	%	Rata-rata area blooming pada permukaan cokelat (%)
1	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
2	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
3	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
4	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
5	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
6	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
7	1	x	x	x	x	x	x
	2	x	x	x	x	x	

	3	x	x	x	x	x	
8	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
9	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
10	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
11	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
12	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
13	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
14	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
15	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
16	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
17	1	x	x	x	x	x	x
	2	x	x	x	x	x	
	3	x	x	x	x	x	
18	1	480405	434878	90,52	45527	9,48	8,97
	2	339799	316307	93,08	23492	6,90	
	3	324042	289958	89,48	34084	10,52	
19	1	396782	357835	90,18	38947	9,82	12,70
	2	289980	238398	82,21	51582	17,79	
	3	329382	294766	89,49	34616	10,51	
20	1	541781	449473	82,96	92308	17,04	16,66
	2	317712	268328	84,45	49384	15,50	
	3	334673	276424	82,59	58249	17,40	
21	1	352627	306783	86,99	45844	13,00	30,83
	2	240782	142177	59,04	98605	40,95	
	3	269587	165679	61,45	103908	38,54	

Keterangan:

x = tidak terbentuk *blooming*

## c. Pengujian Aktivitas Antioksidan

Ulangan	Konsentrasi (ppm)	Absorbansi	Absorbansi Kontrol	% inhibisi
1	200	0,486	0,630	22,86
	300	0,421	0,630	33,17
	400	0,361	0,630	42,70
	500	0,308	0,630	51,11
	600	0,258	0,630	59,05
	IC <sub>50</sub>			
2	200	0,449	0,574	21,78
	300	0,399	0,574	30,49
	400	0,325	0,574	43,38
	500	0,283	0,574	50,70
	600	0,257	0,574	55,23
	IC <sub>50</sub>			
3	200	0,434	0,574	24,39
	300	0,356	0,574	37,98
	400	0,316	0,574	44,95
	500	0,264	0,574	54,01
	600	0,228	0,574	60,28
	IC <sub>50</sub>			
Rata-rata IC <sub>50</sub>				489,03

Grafik Kurva Aktivitas Antioksidan Cokelat *Matcha*