

LAMPIRAN I

Data Hasil Koagulasi lateks

Konsentrasi Koagulan (% v/v)	Volume Getah Karet (ml)	Lateks yang dihasilkan (gram)
20	25	16,5641
40	25	17,2104
60	25	17,7873
80	25	17,3008
100	25	17,0951

Data Hasil Pembuatan *gum base*

Sampel	Lateks (gram)	Beeswax (gram)	Minyak Sayur (ml)	SP (gram)	<i>Gum Base</i> (gram)
1	10,0082	10,0014	30	5,0009	48,9987
2	10,0154	10,0032	30	5,0027	49,0133
3	10,0071	10,0064	30	5,0003	49,0006
4	10,0101	10,0019	30	5,0013	48,8791
5	10,0003	10,0116	30	5,0045	49,0066

Data Hasil Pembuatan Permen Karet

Sampel	<i>Gum Base</i> (gram)	Gula Cair (ml)	Softener (ml)	Permen Karet (gram)
1	30,0831	40	10	100,1079
2	29,8791	40	10	100,0173
3	30,0057	40	10	100,0319
4	30,0728	40	10	100,0186
5	30,0318	40	10	100,0078

Kadar air

Sampel	Cawan kosong	cawan +sampel	cawan setelah	berat sampel belum	kadar air %
1	50,6721	51,6900	51,6367	1,0179	5,2363
2	55,3678	56,3702	56,3124	1,0024	5,6445
3	54,5113	55,5179	55,4603	1,0066	5,7222
4	55,4290	56,4352	56,3742	1,0062	6,0624
5	51,4438	52,4506	52,3840	1,0068	6,6150

Kadar abu

Sampel	Krusibel	krus	Krus +	berat	kadar abu
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	kosong	+sampel	sampel setelah	sampel belum	%
1	13,2300	14,2338	14,2213	1,0038	1,2453
2	13,4219	14,4185	14,4054	0,9966	1,3055
3	13,2475	14,2548	14,4038	1,0073	1,4561
4	13,2300	14,2451	14,2280	1,0151	1,6848
5	13,4219	14,4236	14,4064	1,0017	1,7162

Data Hasil Pengujian Organoleptik Secara Umum

Sampel	Konsentrasi		
	koagulan (% v/v)	Bau	Rasa
1	20	Normal	Tidak Normal
2	40	Normal	Normal
3	60	Normal	Normal
4	80	Normal	Normal
5	100	Normal	Normal

Data Hasil Pengujian Karakteristik Permen Karet

Sampel	Kadar air (%)	Kadar abu (%)	pH	Kadar logam (+/-)		Kadar gula reduksi (%)
				Cu	Pb	
1	5,2363	1,2453	5	-	-	6,2170
2	5,6445	1,3055	5	-	-	5,8258
3	5,7222	1,4561	5	-	-	5,7196
4	6,0624	1,6848	4	-	-	5,8480
5	6,615	1,7162	4	-	-	5,9411

Lampiran

KUISIONER

Tanggal :

Nama :

Usia :

Produk :

Instruksi : Dihadapan saudara telah disajikan 5 sampel permen karet. Saudara diminta untuk memberikan penilaian terhadap bau, rasa, dan tekstur permen karet tersebut dengan memberikan skor dalam 4 skala, yaitu

1 = tidak suka

2 = netral

3 = suka

sampel	bau	rasa	Tekstur
1			
2			
3			
4			
5			

LAMPIRAN II PERHITUNGAN

1. Konsentrasi Koagulan

a. Ektrak Jeruk nipis 4 ml (dalam 20 ml larutan)

$$\begin{aligned}\text{Konsentrasi (\% v/v)} &= \frac{V_{\text{ekstrak}}}{V_{\text{larutan}}} \times 100\% \\ &= \frac{4 \text{ ml}}{20 \text{ ml}} \times 100\% \\ &= 20\%\end{aligned}$$

b. Ektrak Jeruk nipis 8 ml

$$\begin{aligned}\text{Konsentrasi (\% v/v)} &= \frac{V_{\text{ekstrak}}}{V_{\text{larutan}}} \times 100\% \\ &= \frac{8 \text{ ml}}{20 \text{ ml}} \times 100\% \\ &= 40\%\end{aligned}$$

c. Ektrak Jeruk nipis 12 ml

$$\begin{aligned}\text{Konsentrasi (\% v/v)} &= \frac{V_{\text{ekstrak}}}{V_{\text{larutan}}} \times 100\% \\ &= \frac{12 \text{ ml}}{20 \text{ ml}} \times 100\% \\ &= 60\%\end{aligned}$$

d. Ektrak Jeruk nipis 16 ml

$$\begin{aligned}\text{Konsentrasi (\% v/v)} &= \frac{V_{\text{ekstrak}}}{V_{\text{larutan}}} \times 100\% \\ &= \frac{16 \text{ ml}}{20 \text{ ml}} \times 100\% \\ &= 80\%\end{aligned}$$

e. Ekstrak Jeruk nipis 20 ml

$$\begin{aligned}\text{Konsentrasi (\% v/v)} &= \frac{V_{\text{ekstrak}}}{V_{\text{larutan}}} \times 100\% \\ &= \frac{20 \text{ ml}}{20 \text{ ml}} \times 100\% \\ &= 100\%\end{aligned}$$

2. Kadar Air

No.	Konsentrasi koagulan (% v/v)	Cawan Kosong (gram)	Cawan + Sampel (sebelum) (gram)	Cawan + Sampel (sesudah) (gram)
1	4	50,6721	51,6900	51,6367
2	8	55,3678	56,3702	56,3124
3	12	54,5113	55,5179	55,4603
4	16	55,4290	56,4352	56,3742
5	20	51,4438	52,4506	52,3840

a. Konsentrasi 20%

$$\begin{aligned}\% \text{ Kadar air} &= \frac{W_a - W_b}{W_a - W_0} \times 100\% \\ &= \frac{(51,6900 - 51,6367) \text{ gram}}{(51,6900 - 50,6721) \text{ gram}} \times 100\% \\ &= 5,2363 \%\end{aligned}$$

b. Konsentrasi 40%

$$\begin{aligned}\% \text{ Kadar air} &= \frac{W_a - W_b}{W_a - W_0} \times 100\% \\ &= \frac{(56,3702 - 56,3124) \text{ gram}}{(56,3702 - 55,3678) \text{ gram}} \times 100\% \\ &= 5,6445\%\end{aligned}$$

c. Konsentrasi 60%

$$\begin{aligned}\% \text{ Kadar air} &= \frac{W_a - W_b}{W_a - w_0} \times 100\% \\ &= \frac{(55,5179 - 55,4603) \text{ gram}}{(55,5179 - 54,5113) \text{ gram}} \times 100\% \\ &= 5,7222\%\end{aligned}$$

d. Konsentrasi 80%

$$\begin{aligned}\% \text{ Kadar air} &= \frac{W_a - W_b}{W_a - w_0} \times 100\% \\ &= \frac{(56,4352 - 56,3742) \text{ gram}}{(56,4352 - 55,4290) \text{ gram}} \times 100\% \\ &= 6,0624\%\end{aligned}$$

e. Konsentrasi 100%

$$\begin{aligned}\% \text{ Kadar air} &= \frac{W_a - W_b}{W_a - w_0} \times 100\% \\ &= \frac{(52,4506 - 52,3840) \text{ gram}}{(52,4506 - 51,4438) \text{ gram}} \times 100\% \\ &= 6,6150\%\end{aligned}$$

3. Kadar Abu

No.	Ekstrak Belimbing Wuluh (ml)	Krusibel Kosong (0) (gram)	Krusibel dan Sampel sebelum diabukan (a) (gram)	Krusibel + Sampel setelah diabukan (b) (gram)
1	4	13,2300	14,2338	14,2213
2	8	13,4219	14,4185	14,4054
3	12	13,2475	14,2548	14,4038
4	16	13,2300	14,2451	14,2280
5	20	13,4219	14,4236	14,4064

a. Konsentrasi 20%

$$\begin{aligned}\% \text{ Kadar abu} &= \frac{W_a - W_b}{W_a - w_0} 100\% \\ &= \frac{14,2338 - 14,2213}{14,2338 - 13,2300} \times 100\% \\ &= 1,2453\%\end{aligned}$$

b. Konsentrasi 40%

$$\begin{aligned}\% \text{ Kadar abu} &= \frac{W_a - W_b}{W_a - w_0} \times 100\% \\ &= \frac{(14,4185 - 14,4054) \text{ gram}}{(14,4185 - 13,4219) \text{ gram}} \times 100\% \\ &= 1,3055\%\end{aligned}$$

c. Konsentrasi 60%

$$\begin{aligned}\% \text{ Kadar abu} &= \frac{W_a - W_b}{W_a - w_0} \times 100\% \\ &= \frac{(14,2548 - 14,4038) \text{ gram}}{(14,2548 - 13,2475) \text{ gram}} \times 100\% \\ &= 1,4561\%\end{aligned}$$

d. Konsentrasi 80%

$$\begin{aligned}\% \text{ Kadar abu} &= \frac{W_a - W_b}{W_a - w_0} \times 100\% \\ &= \frac{(14,2451 - 14,2280) \text{ gram}}{(14,2451 - 13,2300) \text{ gram}} \times 100\% \\ &= 1,6848\%\end{aligned}$$

e. Konsentrasi 100%

$$\begin{aligned}\% \text{ Kadar abu} &= \frac{W_a - W_b}{W_a - w_0} \times 100\% \\ &= \frac{(14,4236 - 14,4064) \text{ gram}}{(14,4236 - 13,4219) \text{ gram}} \times 100\% \\ &= 1,7162\%\end{aligned}$$

4. Gula Reduksi

Sampel	Berat sampel (gram)
1	2,0025
2	2,0083
3	2,0019
4	2,0007
5	2,0104

Tabel. Hasil titrasi dengan Na-tiosulfat

Sampel	Titrasi sampel (a) (ml)	Titrasi blanko (b)(ml)	Selisih hasil titrasi (b-a) (ml)
1	14,9		5,1
2	15,2		4,8
3	15,3	20	4,7
4	15,2		4,8
5	15,1		4,9

Menghitung angka tabel:

a. Sampel 1:

$$\begin{aligned}
 AT &= (b - a)ml \times (\text{normalitas } Na_2SO_3/0,1N) \\
 &= 5,1ml \times (0,1N/0,1N) \\
 &= 5,1 \text{ ml}
 \end{aligned}$$

Didapatkan angka titrasi (AT) sebesar 5,1 ml. didapatkan bobot glukosa pada sampel (w1) sebesar 12,45 mg.

b. Sampel 2:

$$\begin{aligned}
 AT &= (b - a)ml \times (\text{normalitas } Na_2SO_3/0,1) \\
 &= 4,8ml \times (0,1 N/0,1) \\
 &= 4,8 \text{ ml}
 \end{aligned}$$

Didapatkan angka titrasi (AT) sebesar 4,8 ml. didapatkan bobot glukosa pada sampel (w1) sebesar 11,7 mg.

c. Sampel 3:

$$\begin{aligned} AT &= (b - a)ml \times (\text{normalitas } Na_2SO_3/0,1) \\ &= 4,7ml \times (0,1 N/0,1) \\ &= 4,7 \text{ ml} \end{aligned}$$

Didapatkan angka titrasi (AT) sebesar 4,7 ml. didapatkan bobot glukosa pada sampel (w1) sebesar 11,45 mg.

d. Sampel 4:

$$\begin{aligned} AT &= (b - a)ml \times (\text{normalitas } Na_2SO_3/0,1) \\ &= 4,8ml \times (0,1 N/0,1) \\ &= 4,8 \end{aligned}$$

Didapatkan angka titrasi (AT) sebesar 4,8 ml. didapatkan bobot glukosa pada sampel (w1) sebesar 11,7 mg.

e. Sampel 5:

$$\begin{aligned} AT &= (b - a)ml \times (\text{normalitas } Na_2SO_3/0,1) \\ &= 4,9ml \times (0,1 N/0,1) \\ &= 4,9 \end{aligned}$$

Didapatkan angka titrasi (AT) sebesar 4,9 ml. didapatkan bobot glukosa pada sampel (w1) sebesar 11,95 mg.

Gula Reduksi

$$\% \text{ gula reduksi} = \frac{w_1 \times fp \times 100}{W}$$

Dimana : W_1 = Bobot glukosa
fp = Faktor pengenceran
W = Bobot contoh (mg)

a. Sampel 1

$$\begin{aligned}\% \text{ gula reduksi} &= \frac{w1 \times fp}{w} \times 100\% \\ &= \frac{12,45 \times 10}{2002,5} \times 100\% \\ &= 6,2170\%\end{aligned}$$

b. Sampel 2

$$\begin{aligned}\% \text{ gula reduksi} &= \frac{w1 \times fp}{w} \times 100\% \\ &= \frac{11,7 \times 10}{2008,3} \times 100\% \\ &= 5,8258\%\end{aligned}$$

c. Sampel 3

$$\begin{aligned}\% \text{ gula reduksi} &= \frac{w1 \times fp}{w} \times 100\% \\ &= \frac{11,45 \times 10}{2001,9} \times 100\% \\ &= 5,7196\%\end{aligned}$$

d. Sampel 4

$$\begin{aligned}\% \text{ gula reduksi} &= \frac{w1 \times fp}{w} \times 100\% \\ &= \frac{11,7 \times 10}{2000,7} \times 100\% \\ &= 5,8480\%\end{aligned}$$

e. Sampel 5

$$\begin{aligned}\% \text{ gula reduksi} &= \frac{w1 \times fp}{w} \times 100\% \\ &= \frac{11,95 \times 10}{2010,4} \times 100\% \\ &= 5,9411\%\end{aligned}$$

**LAMPIRAN III
DOKUMENTASI KEGIATAN PENELITIAN**

PEMBUATAN PERMEN KARET



Gambar 18. Penyadapan getah karet



Gambar 19. Filtrasi getah karet



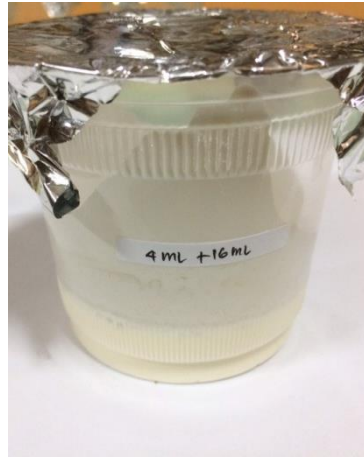
Gambar.20. Proses Sentrifugasi



Gambar 21. Preparasi koagulan



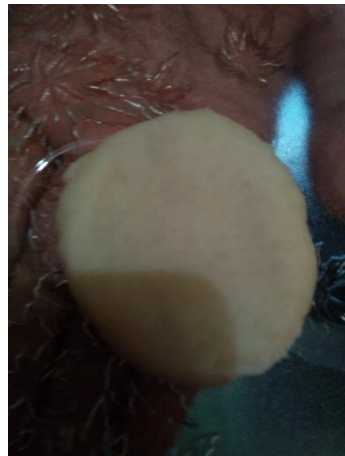
Gambar 22. Hasil sentrifugasi lateks



Gambar 23. Koagulasi Lateks



Gambar 24. Pembuatan gum base



Gambar 25. Hasil gum base



Gambar 26. Pemasakan permen karet



Gambar 27. Permen karet

ANALISA PRODUK



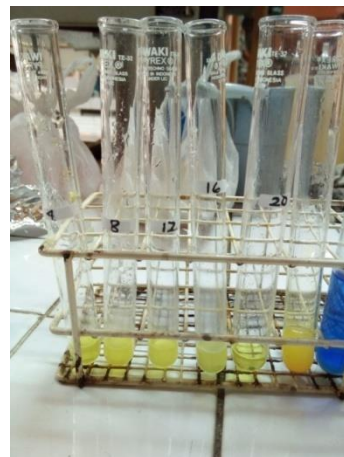
Gambar 28. Analisa Kadar air



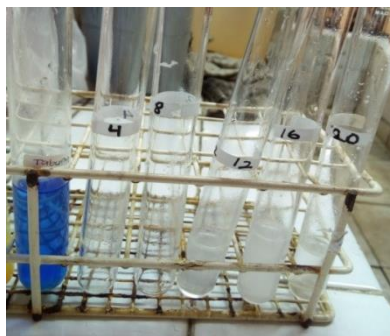
Gambar 29. Analisa Kadar Abu



Gambar 30. Analisa Kadar Gula Reduksi



Gambar 31. Analisa Kadar Logam Pb



Gambar 32. Analisa Kadar Logam Cu