

Lampiran

Lampiran 1. Perhitungan rendaman ekstrak daun belimbing wuluh

Rumus:

$$\begin{aligned}\text{Presentase Rendaman} &= \frac{\text{Berat ekstrak}}{\text{Berat sampel}} \times 100 \\ &= \frac{48,1}{400} \times 100 \\ &= 12,02\%\end{aligned}$$

Lampiran 2. Uji kadar air

$$\text{Rumus} = \frac{(B-A)-(C-A)}{(B-A)} \times 100$$

$$\begin{aligned}\text{Perhitungan} &= \frac{(74,1-64,2)-(73,2-64,2)}{(74,1-64,2)} \times 100\% \\ &= \frac{9,9-9}{9,9} \times 100\% \\ &= \frac{0,9}{9,9} \times 100\% \\ &= 9\%\end{aligned}$$

Keterangan: A= Berat cawan porselin kosong

B= Berat cawan porselin + simplisia sebelum di oven

C= Berat cawan porselin + simplisia sesudah di oven

Lampiran 3. Perhitungan susut pengeringan

$$\text{Rumus} = \frac{(B-A)-(C-A)}{(B-A)} \times 100$$

$$\begin{aligned}\text{Perhitungan} &= \frac{(53,2-43,1)-(52,3-43,1)}{(53,2-43,1)} \times 100\% \\ &= \frac{10,1-9,2}{10,1} \times 100\% \\ &= \frac{0,9}{10,1} \times 100\% \\ &= 8,9\%\end{aligned}$$

Keterangan: A= Berat cawan porselin kosong

B= Berat cawan porselin + simplisia sebelum di oven

C= Berat cawan porselin + simplisia sesudah di oven

Lampiran 4. Perhitungan formulasi bahan sediaan gel

a. F0 (Basis gel)

$$\text{Carbomer} = \frac{2}{100} \times 20 \text{ gr} = 0,4 \text{ gr}$$

$$\text{Propilenglikol} = \frac{15}{100} \times 20 \text{ gr} = 3 \text{ gr}$$

$$\text{TEA} = \frac{3}{100} \times 20 \text{ gr} = 0,6 \text{ gr}$$

$$\text{Metil paraben} = \frac{0,6}{100} \times 20 \text{ gr} = 0,12 \text{ gr}$$

$$\text{Propil paraben} = \frac{0,2}{100} \times 20 \text{ gr} = 0,04 \text{ gr}$$

$$\begin{aligned}\text{Aquadest} &= 20 - (0,4+3+0,6+0,12+0,04) \\ &= 20 - 4,16 \\ &= 15,84 \text{ gr}\end{aligned}$$

b. F1 Konsentrasi 6%

$$\text{Ekstrak daun belimbing wuluh} = \frac{6}{100} \times 20 \text{ gr} = 1,2 \text{ gr}$$

$$\text{Carbomer} = \frac{2}{100} \times 20 \text{ gr} = 0,4 \text{ gr}$$

$$\text{Propilenglikol} = \frac{15}{100} \times 20 \text{ gr} = 3 \text{ gr}$$

$$\text{TEA} = \frac{3}{100} \times 20 \text{ gr} = 0,6 \text{ gr}$$

$$\text{Metil paraben} = \frac{0,6}{100} \times 20 \text{ gr} = 0,12 \text{ gr}$$

$$\text{Propil paraben} = \frac{0,2}{100} \times 20 \text{ gr} = 0,04 \text{ gr}$$

$$\begin{aligned}\text{Aquadest} &= 20 - (1,2+ 0,4+3+0,6+0,12+0,04) \\ &= 20 - 5,36 \\ &= 14,64 \text{ gr}\end{aligned}$$

c. F2 konsentrasi 8%

$$\text{Ekstrak daun belimbing wuluh} = \frac{8}{100} \times 20 \text{ gr} = 1,6 \text{ gr}$$

$$\text{Carbomer} = \frac{2}{100} \times 20 \text{ gr} = 0,4 \text{ gr}$$

$$\text{Propilenglikol} = \frac{15}{100} \times 20 \text{ gr} = 3 \text{ gr}$$

TEA	$= \frac{3}{100} \times 20 \text{ gr} = 0,6 \text{ gr}$
Metil paraben	$= \frac{0,6}{100} \times 20 \text{ gr} = 0,12 \text{ gr}$
Propil paraben	$= \frac{0,2}{100} \times 20 \text{ gr} = 0,04 \text{ gr}$
Aquadest	$= 20 - (1,6 + 0,4 + 3 + 0,6 + 0,12 + 0,04)$ $= 20 - 5,76$ $= 14,24 \text{ gr}$

d. F3 konsentrasi 10%

Ekstrak daun belimbing wuluh	$= \frac{10}{100} \times 20 \text{ gr} = 2 \text{ gr}$
Carbomer	$= \frac{2}{100} \times 20 \text{ gr} = 0,4 \text{ gr}$
Propilenglikol	$= \frac{15}{100} \times 20 \text{ gr} = 3 \text{ gr}$
TEA	$= \frac{3}{100} \times 20 \text{ gr} = 0,6 \text{ gr}$
Metil paraben	$= \frac{0,6}{100} \times 20 \text{ gr} = 0,12 \text{ gr}$
Propil paraben	$= \frac{0,2}{100} \times 20 \text{ gr} = 0,04 \text{ gr}$
Aquadest	$= 20 - (2 + 0,4 + 3 + 0,6 + 0,12 + 0,04)$ $= 20 - 6,16$ $= 13,84 \text{ gr}$

Lampiran 5. Perhitungan banyaknya sampel (Mencit)

Rumus Federer : $(n-1)(t-1) \geq 15$

Keterangan : n : Besar Sampel

t : Banyaknya Perlakuan

penyelesaian :

$$(n-1)(5-1) \geq 15$$

$$(n-1)4 \geq 15$$

$$4n - 4 \geq 15$$

$$4n \geq 15 + 4$$

$$n \geq \frac{19}{4}$$

$$\geq 4,75 - 5$$

$$\geq 5$$

Jadi, jumlah sampel yang digunakan = 5 ekor perkelompok

Lampiran 6. Hasil data pengukuran volume edema mencit

Perlakuan		Sebelum induksi	Setelah induksi	Menit 30	Menit 60	Menit 90	Menit 120
K-	1	2,16	3,8	3,5	3,8	4	4,5
	2	2,33	3,86	3,76	4	4,2	4,4
	3	2,43	3,9	3,8	4,2	4,3	4,43
	4	2,23	4	4,1	4,1	4,2	4,36
	5	2,5	4,1	4	4,2	4,3	4,46
Rata- rata		2,33	3,93	3,83	4,06	4,2	4,43
K+	1	2,3	4,2	2,53	2,46	2,4	2,4
	2	2,23	4,13	2,63	2,53	2,36	2,36
	3	2,16	4,4	2,56	2,43	2,33	2,26
	4	2,23	4,3	2,6	2,5	2,4	2,3
	5	2,5	4,36	2,43	2,36	2,33	2,3
Rata- rata		2,28	4,27	2,55	2,45	2,36	2,32
F1	1	2,4	4,2	2,76	2,66	2,6	2,56
	2	2,23	4,3	2,86	2,76	2,73	2,7
	3	2,26	4,2	2,9	2,83	2,8	2,76
	4	2,33	4,3	2,66	2,6	2,56	2,53
	5	2,16	4,1	2,73	2,63	2,6	2,56
Rata-rata		2,27	4,22	2,78	2,69	2,65	2,62
F2	1	2,46	4,2	2,66	2,56	2,53	2,46
	2	2,43	4,3	2,7	2,66	2,6	2,53
	3	2,23	4,4	2,7	2,63	2,56	2,53
	4	2,33	4,1	2,73	2,66	2,6	2,56
	5	2,26	4,2	2,6	2,53	2,46	2,43
Rata-rata		2,34	4,28	2,67	2,60	2,55	2,50
F3	1	2,36	4,2	2,7	2,6	2,56	2,46
	2	2,4	4,5	2,6	2,46	2,43	2,4
	3	2,3	4,4	2,46	2,36	2,33	2,26
	4	2,16	4,3	2,6	2,43	2,4	2,36
	5	2,23	4,2	2,6	2,56	2,43	2,4
Rata- rata		2,29	4,32	2,59	2,48	2,43	2,37

Lampiran 7. Hasil perhitungan udema dan penghambatan

$$\text{Edema (\%)} = \frac{vt - vo}{vo} \times 100\%$$

Kontrol negatif

$$3. \% V_{t1} = 2,83 = \frac{2,83 - 2,33}{2,33} \times 100\%$$

$$V_o = 2,33 = 64,37\%$$

$$4. \% V_{t2} = 4,06 = \frac{4,06 - 2,33}{2,33} \times 100\%$$

$$V_o = 2,33 = 74,24\%$$

$$5. \% V_{t3} = 4,2 = \frac{4,2 - 2,33}{2,33} \times 100\%$$

$$V_o = 2,33 = 80,25\%$$

$$6. \% V_{t4} = 4,43 = \frac{4,43 - 2,33}{2,33} \times 100\%$$

$$V_o = 2,33 = 90,12\%$$

Kontrol positif

$$1. \% V_{t1} = 2,55 = \frac{2,55 - 2,28}{2,28} \times 100\%$$

$$V_o = 2,28 = 11,84\%$$

$$2. \% V_{t2} = 2,45 = \frac{2,45 - 2,28}{2,28} \times 100\%$$

$$V_o = 2,28 = 7,45\%$$

$$3. \% V_{t3} = 2,36 = \frac{2,36 - 2,28}{2,28} \times 100\%$$

$$V_o = 2,28 = 3,50\%$$

$$4. \% V_{t4} = 2,32 = \frac{2,32 - 2,28}{2,28} \times 100\%$$

$$V_o = 2,28 = 1,75\%$$

F1 (6%)

$$1. \% V_{t1} = 2,78 = \frac{2,78-2,27}{2,27} \times 100\%$$

$$V_o = 2,27 = 22,46\%$$

$$2. \% V_{t2} = 2,69 = \frac{2,69-2,27}{2,27} \times 100\%$$

$$V_o = 2,27 = 18,50\%$$

$$3. \% V_{t3} = 2,65 = \frac{2,65-2,27}{2,27} \times 100\%$$

$$V_o = 2,27 = 16,74\%$$

$$4. \% V_{t4} = 2,62 = \frac{2,62-2,27}{2,27} \times 100\%$$

$$V_o = 2,27 = 15,08\%$$

F2 (8%)

$$1. \% V_{t1} = 2,67 = \frac{2,67-2,34}{2,34} \times 100\%$$

$$V_o = 2,34 = 14,10\%$$

$$2. \% V_{t2} = 2,60 = \frac{2,60-2,34}{2,34} \times 100\%$$

$$V_o = 2,34 = 11,11\%$$

$$3. \% V_{t3} = 2,55 = \frac{2,55-2,34}{2,34} \times 100\%$$

$$V_o = 2,34 = 8,97\%$$

$$4. \% V_{t4} = 2,50 = \frac{2,50-2,34}{2,34} \times 100\%$$

$$V_o = 2,34 = 6,83\%$$

F3 (10%)

$$1. \% V_{t1} = 2,59 = \frac{2,59-2,29}{2,29} \times 100\%$$

$$V_o = 2,29 = 13,10\%$$

$$2. \% V_{t2} = 2,48 = \frac{2,48-2,29}{2,29} \times 100\%$$

$$V_o = 2,29 = 8,29\%$$

$$3. \% V_{t3} = 2,43 = \frac{2,43-2,29}{2,29} \times 100\%$$

$$V_o = 2,29 = 6,11\%$$

$$4. \% V_{t4} = 2,37 = \frac{2,37-2,29}{2,29} \times 100\%$$

$$V_o = 2,29 = 3,49\%$$

Perhitungan penghambatan edema

$$\text{Penghambatan edema (\%)} = \frac{a-b}{a} \times 100\%$$

$$a (K-) = \frac{64,37+74,24+80,25+90,12}{4} = 77,24\%$$

$$b (K+) = \frac{11,84+7,45+3,50+1,75}{4} = 6,13\%$$

$$b (F1) = \frac{22,46+18,50+16,74+15,08}{4} = 18,19\%$$

$$b (F2) = \frac{14,10+11,11+8,29+6,83}{4} = 10,25\%$$

$$b (F3) = \frac{13,10+8,29+6,11+3,49}{4} = 7,74\%$$

$$\text{Penghambatan edema (\%)} = \frac{a-b}{a} \times 100\%$$

$$\text{Kontrol positif} = \frac{77,24-6,13}{77,24} \times 100\%$$

$$= 92,06\%$$

$$F1 (\text{gel ekstrak } 6\%) = \frac{77,24-18,19}{77,24} \times 100\%$$

$$= 76,45\%$$

$$F2 (\text{gel ekstrak } 8\%) = \frac{77,24-10,25}{77,24} \times 100\%$$

$$= 86,72\%$$

$$F3 (\text{gel ekstrak } 10\%) = \frac{77,24-7,74}{77,24} \times 100\%$$

$$= 89,97\%$$

Lampiran 8. Dokumentasi preparasi sampel daun belimbing wuluh

No	Gambar	Keterangan
1		Pengambilan daun belimbing wuluh (<i>Averrhoa bilimbi</i>) hinga di bersihkan dari kotoran
2		Proses pencucian daun belimbing wuluh
3		Proses pengeringan menggunakan kain hitam

Lampiran 9. Dokumentasi hasil uji susut pengeringan

No	Gambar	Penimbangan	Bobot jenis
1.		Berat cawan porselin kosong	43,1 gram
2.		Berat cawan poselin +simplisia (sebelum dioven)	53,2 gram
3.		Berat cawan poselin +simplisia (sesudah dioven)	52,3 gram

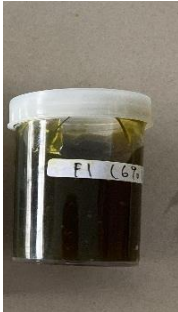
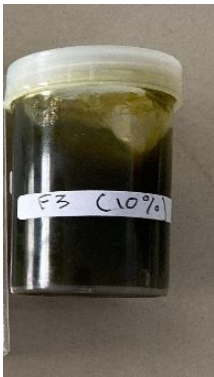
Lampiran 10. Dokumentasi hasil uji kadar air

No	Gambar	Penimbangan	Bobot jenis
1.		Berat cawan porselin kosong	64,2 gram
2.		Berat cawan poselin + simplisia (sebelum dioven)	74,1 gram
3.		Berat cawan poselin + simplisia (sesudah dioven)	73,2 gram

Lampiran 11. Gambar yang digunakan dalam formulasi sediaan gel

Carbomer 	TEA 
Propil paraben 	Propilen glikol 
Aquadest 	Metil paraben 

Lampiran 12. Dokumentasi hasil uji organoleptis

F0	F1
	
F2	F3
	

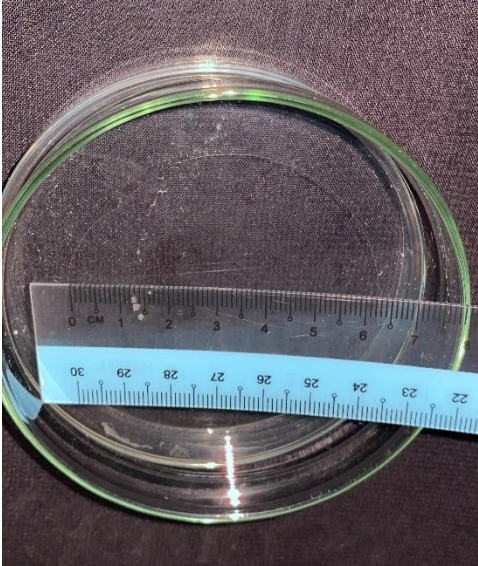
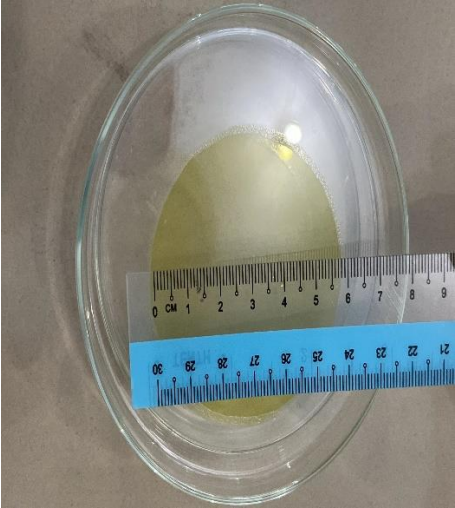
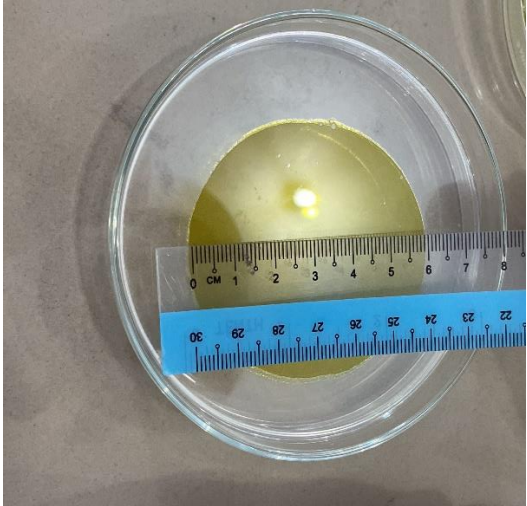
Lampiran 13. Dokumentasi hasil uji Ph

Formula 0	Formula 1
	
Formula 2	Formula 3
	

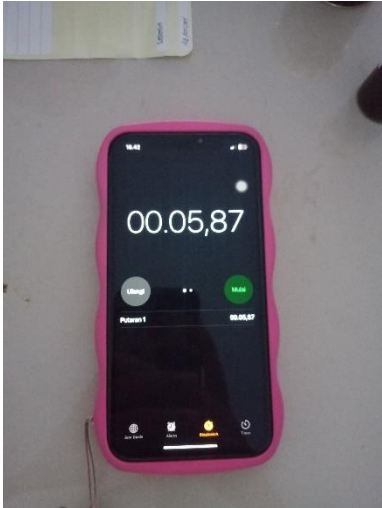
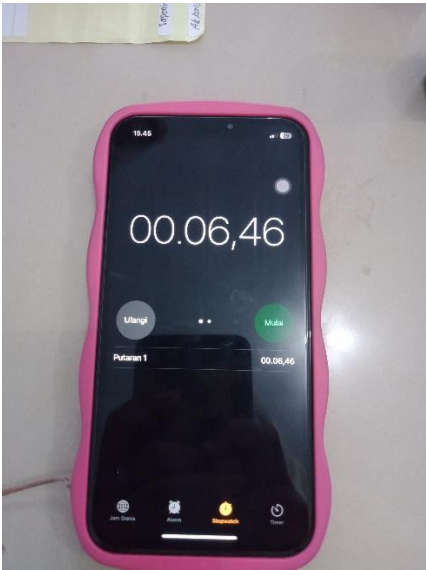
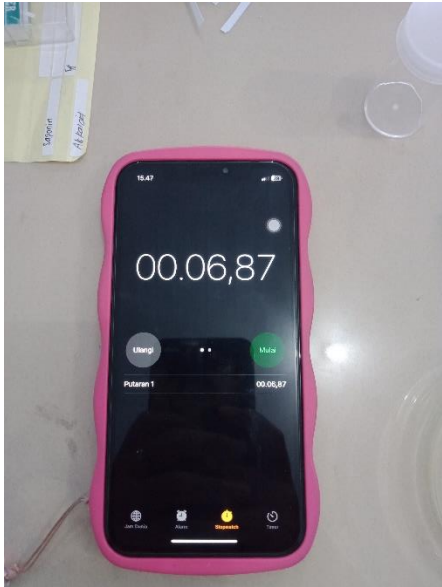
Lampiran 14. Dokumentasi hasil uji homogen

Formula 0	Formula 1
	
Formula 2	Formula 3
	

Lampiran 15. Dokumentasi hasil uji daya sebar

Formula 0	Formula 1
	
Formula 2	Formula 3
	

Lampiran 16. Dokumentasi hasil uji daya lekat

Formula 0	Formula 1
 A smartphone with a pink case displays a timer application. The screen shows a large digital timer at 00.06,87. Below the timer are buttons labeled 'Ulangi' (Repeat) and 'Mula' (Start). At the bottom, it says 'Putaran 1' and '00.06,87'. The phone is connected to a charging cable.	 A smartphone with a pink case displays a timer application. The screen shows a large digital timer at 00.05,87. Below the timer are buttons labeled 'Ulangi' (Repeat) and 'Mula' (Start). At the bottom, it says 'Putaran 1' and '00.05,87'. The phone is connected to a charging cable.
Formula 2	Formula 3
 A smartphone with a pink case displays a timer application. The screen shows a large digital timer at 00.06,46. Below the timer are buttons labeled 'Ulangi' (Repeat) and 'Mula' (Start). At the bottom, it says 'Putaran 1' and '00.06,46'. The phone is connected to a charging cable.	 A smartphone with a pink case displays a timer application. The screen shows a large digital timer at 00.06,87. Below the timer are buttons labeled 'Ulangi' (Repeat) and 'Mula' (Start). At the bottom, it says 'Putaran 1' and '00.06,87'. The phone is connected to a charging cable.

Lampiran 17. Dokumentasi hasil uji viskositas

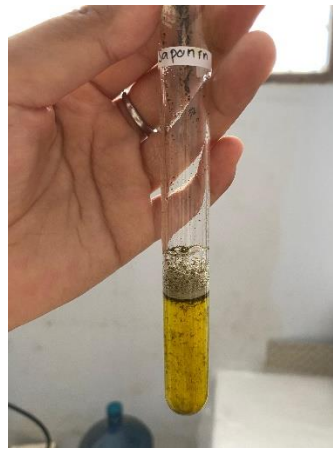
Formula 0	Formula 1
 Brookfield AMETEK DVE Viscometer display for Formula 0. The screen shows a viscosity of 3105 cP at 6.0 RPM. The spindle speed is 62.1% and the shear rate is 562 s⁻¹. The control panel includes buttons for SPEED (+/-), SPINDLE (up/down), MOTOR ON/OFF, and RANGE.	 Brookfield AMETEK DVE Viscometer display for Formula 1. The screen shows a viscosity of 3135 cP at 6.0 RPM. The spindle speed is 62.7% and the shear rate is 562 s⁻¹. The control panel includes buttons for SPEED (+/-), SPINDLE (up/down), MOTOR ON/OFF, and RANGE.
Formula 2	Formula 3
 Brookfield AMETEK DVE Viscometer display for Formula 2. The screen shows a viscosity of 3215 cP at 6.0 RPM. The spindle speed is 64.3% and the shear rate is 562 s⁻¹. The control panel includes buttons for SPEED (+/-), SPINDLE (up/down), MOTOR ON/OFF, and RANGE.	 Brookfield AMETEK DVE Viscometer display for Formula 3. The screen shows a viscosity of 4855 cP at 6.0 RPM. The spindle speed is 97.1% and the shear rate is 562 s⁻¹. The control panel includes buttons for SPEED (+/-), SPINDLE (up/down), MOTOR ON/OFF, and RANGE.

Lampiran 17. Dokumentasi uji skrining fitokimia

Flavanoid



Saponin



Tanin



Lampiran 18. Dokumentasi uji antiinflamasi

Pengukuran kaki sebelum di
induksi karagenan



Pengukuran kaki mencit setelah
di induksi karagenan

