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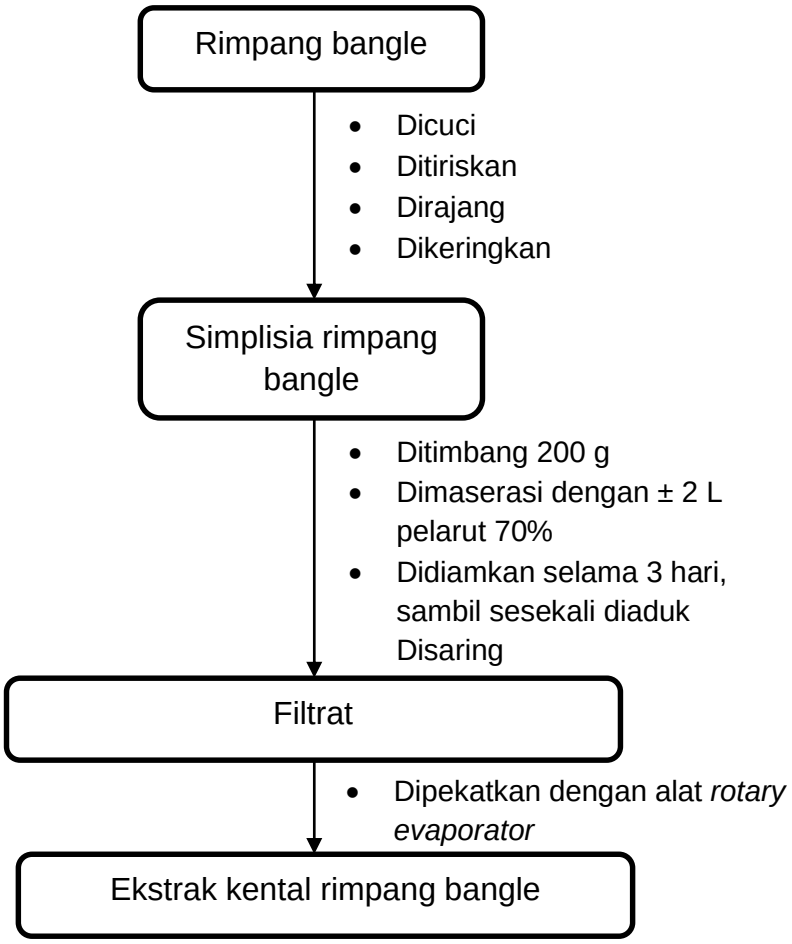
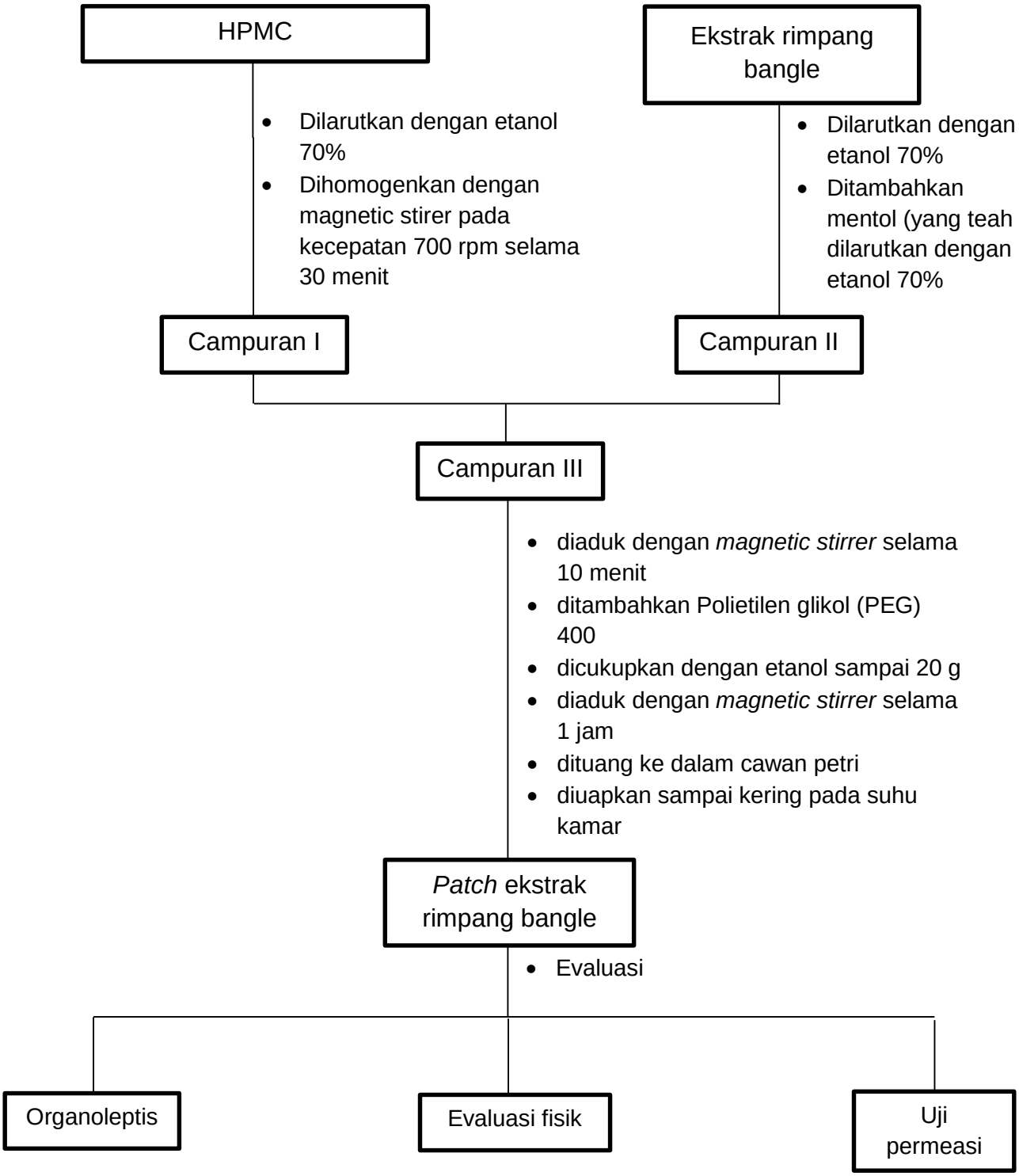
LAMPIRAN

Lampiran 1. Skema Kerja Penelitian

Lampiran 1.1 Preparasi Sampel dan Ekstraksi Simplisia Rimpang Bangle (*Zingiber purpureum* Roxb.)

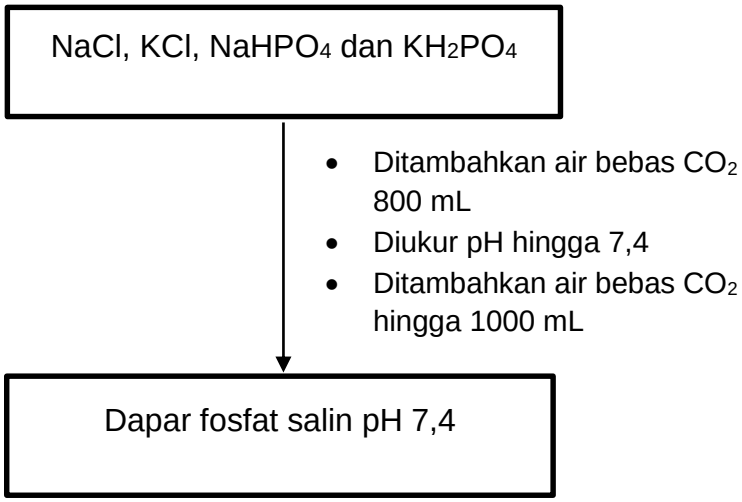


Lampiran 1.2 Formulasi *Patch*

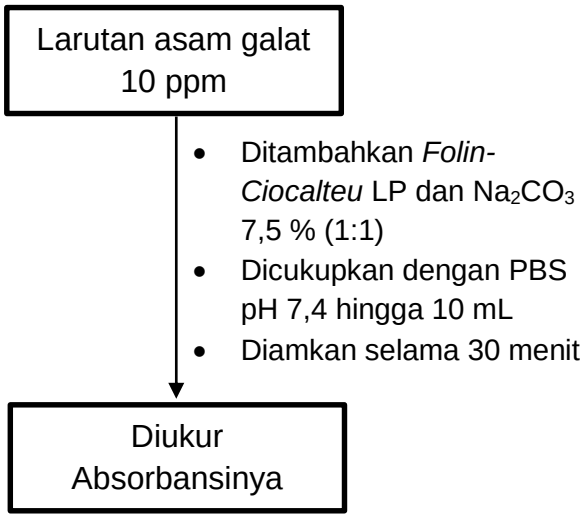


Lampiran 1.3 Uji Permeasi

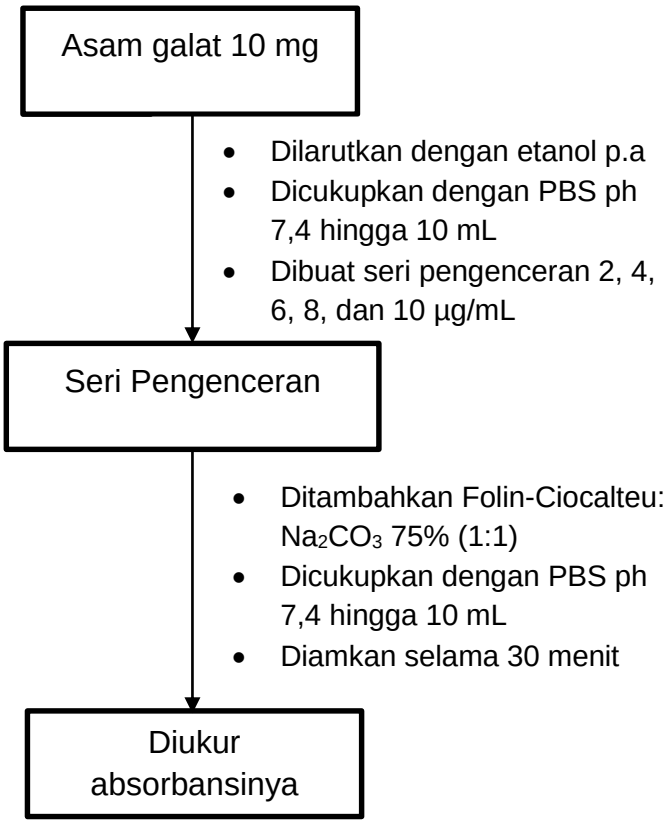
a. Pembuatan *Phosphat Buffer Saline* (PBS) pH 7,4



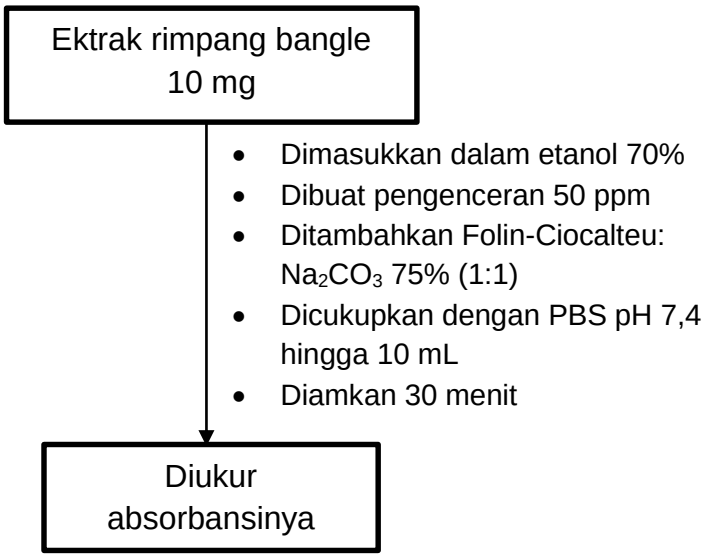
b. Penentuan Panjang Gelombang Maksimum



c. Pembuatan Kurva Baku

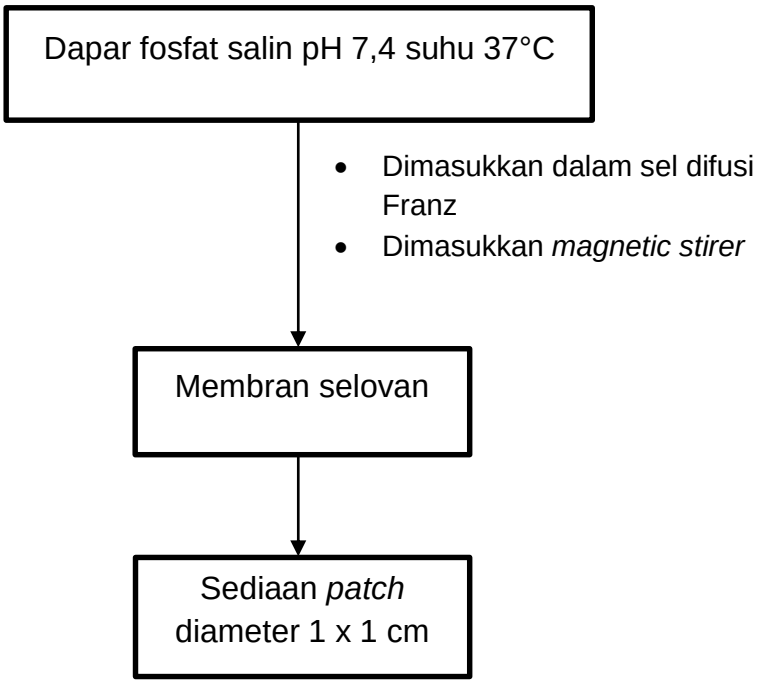


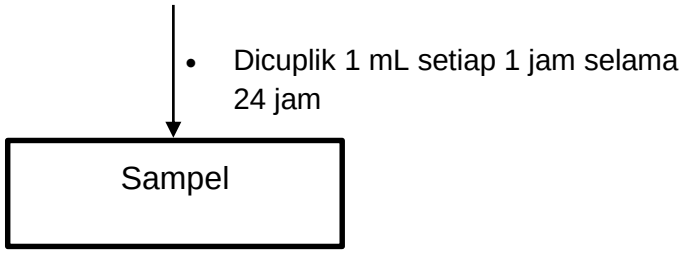
d. Penentuan Kadar Fenolik Ekstrak



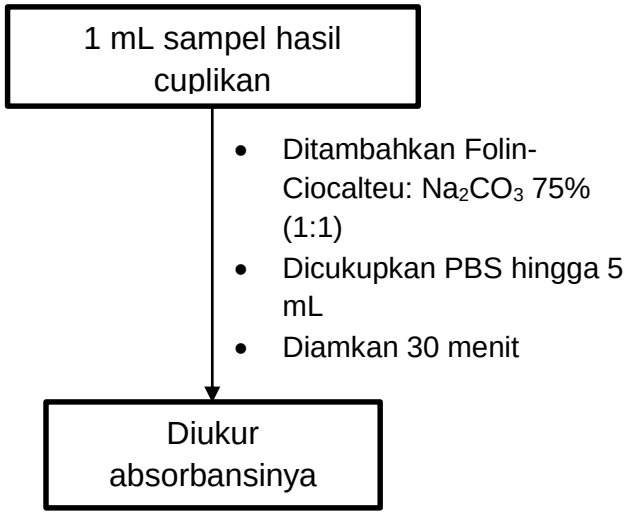
e. Penentuan Kadar Fenolik Sediaan

f. Uji Daya Penetrasi Menggunakan Sel Difusi Franz





g. Penentuan Kadar Fenolik



Lampiran 2. Perhitungan

Lampiran 2.1 Keseragaman Bobot

a. Formula 0

$\bar{x} = \frac{0,6625+0,5903+0,6378}{3} = 0,6302$ mg

$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(0,6625-0,6302)^2+(0,5903-0,6302)^2+(0,6378-0.6302)^2}{3-1}} = 0,036$

$\%RSD = \frac{SD}{X} x100\% = \frac{0,036}{0,6302} x100\% = 5,71\%$

b. Formula 1

$\bar{x} = \frac{0,6810+0,7042+0,7515}{3} = 0,7122$ mg

$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(0,6810-0,7122)^2+(0,7042-0,7122)^2+(0,7515-0.7122)^2}{3-1}} = 0,035$

$\%RSD = \frac{SD}{X} x100\% = \frac{0,035}{0,7122} x100\% = 4,91\%$

c. Formula 2

$\bar{x} = \frac{0,8333+0,8442+0,9205}{3} = 0,866$ mg

$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(0,8333-0,866)^2+(0,8442-0,866)^2+(0,9205-0.866)^2}{3-1}} = 0,047$

$\%RSD = \frac{SD}{X} x100\% = \frac{0,047}{0,866} x100\% = 5,42\%$

d. Formula 3

$\bar{x} = \frac{1,0402+0,9682+1,0482}{3} = 1,0188$ mg

$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(1,0402-1,0188)^2+(0,9682-1,0188)^2+(1,0482-1,0188)^2}{3-1}} = 0,044$

$\%RSD = \frac{SD}{X} x100\% = \frac{0,044}{1,0188} x100\% = 4,31\%$

Lampiran 2.2 Ketebalan

a. Formula 0

$\bar{x} = \frac{0,24+0,23+0,236}{3} = 0,235$ mm

$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(0,24-0,235)^2+(0,23-0,235)^2+(0,236-0,235)^2}{3-1}} = 0,007$

b. Formula 1

$\bar{x} = \frac{0,233+0,24+0,243}{3} = 0,238$ mm

$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(0,233-0,238)^2+(0,24-0,238)^2+(0,243-0,238)^2}{3-1}} = 0,005$

c. Formula 2

$\bar{x} = \frac{0,296+0,30+0,306}{3} = 0,30$ mm

$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(0,296-0,30)^2+(0,30-0,30)^2+(0,306-0,30)^2}{3-1}} = 0,005$

d. Formula 3

$\bar{x} = \frac{0,503+0,493+0,52}{3} = 0,50$ mm

$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(0,503-0,50)^2+(0,493-0,50)^2+(0,52-0,50)^2}{3-1}} = 0,015$

Lampiran 2.3 *Moisture Content (MC)*

a. Formula 0

$$\%MC = \frac{berat\ awal - berat\ akhir}{berat\ akhir} x\ 100\%$$

$$\%MC = \frac{0,6625 - 0,5891}{0,5891} x\ 100\% = 12,45\%$$

$$\%MC = \frac{0,5903 - 0,5210}{0,5210} x\ 100\% = 13,30\%$$

$$\%MC = \frac{0,6378 - 0,5718}{0,5718} x\ 100\% = 11,54\%$$

$\bar{x} = \frac{12,45+13,30+11,54}{3} = 12,43\%$

$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(12,45-12,43)^2+(13,30-12,43)^2+(11,54-12,43)^2}{3-1}} = 0,88$

$\%RSD = \frac{SD}{X} x100\% = \frac{0,88}{12,43} x100\% = 7,07\%$

b. Formula 1

$$\%MC = \frac{berat\ awal - berat\ akhir}{berat\ akhir} x\ 100\%$$

$$\%MC = \frac{0,6810 - 0,5948}{0,5948} x\ 100\% = 14,49\%$$

$$\%MC = \frac{0,7042 - 0,6197}{0,6197} x\ 100\% = 13,63\%$$

$$\%MC = \frac{0{,}7515 - 0{,}6496}{0{,}6496} x\ 100\% = 15{,}68\%$$

$$\bar{x} = \frac{14{,}49+13{,}63+15{,}68}{3} = 14{,}6\%$$

$$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(14{,}49-14{,}6)^2+(13{,}63-14{,}6)^2+(15{,}68-14{,}6)^2}{3-1}} = 1{,}029$$

$$\%RSD = \frac{SD}{X} x100\% = \frac{1{,}029}{14{,}6} x100\% = 7{,}04\%$$

c. Formula 2

$$\%MC = \frac{berat\ awal - berat\ akhir}{berat\ akhir} x\ 100\%$$

$$\%MC = \frac{0{,}8333 - 0{,}7092}{0{,}7092} x\ 100\% = 17{,}49\%$$

$$\%MC = \frac{0{,}8442 - 0{,}7243}{0{,}7243} x\ 100\% = 16{,}55\%$$

$$\%MC = \frac{0{,}9205 - 0{,}7688}{0{,}7688} x\ 100\% = 19{,}73\%$$

$$\bar{x} = \frac{17{,}49+16{,}55+19{,}73}{3} = 17{,}92\%$$

$$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(17{,}49-17{,}92)^2+(16{,}55-17{,}92)^2+(19{,}73-17{,}92)^2}{3-1}} = 1{,}633$$

$$\%RSD = \frac{SD}{X} x100\% = \frac{1{,}633}{17{,}92} x100\% = 9{,}11\%$$

d. Formula 3

$$\%MC = \frac{berat\ awal - berat\ akhir}{berat\ akhir} x\ 100\%$$

$$\%MC = \frac{1{,}0402 - 0{,}8571}{0{,}8571} x\ 100\% = 21{,}36\%$$

$$\%MC = \frac{0{,}9682 - 0{,}8096}{0{,}8096} x\ 100\% = 19{,}58\%$$

$$\%MC = \frac{1{,}0482 - 0{,}8805}{0{,}8805} x\ 100\% = 19{,}04\%$$

$$\bar{x} = \frac{21.53+19{,}58+19{,}04}{3} = 20{,}05\%$$

$$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(21{,}53-20{,}05)^2+(19{,}58-20{,}05)^2+(19{,}04-20{,}05)^2}{3-1}} = 1{,}309$$

$$\%RSD = \frac{SD}{X} x100\% = \frac{1{,}309}{20{,}05} x100\% = 6{,}52\%$$

Lampiran 2.4 Perhitungan Pengenceran

a. Pembuatan larutan baku asam gallat 1000 ppm
   10 g asam gallat dalam 10 ml larutan

b. Penentuan panjang gelombang maksimum (asam gallat 10 ppm)
   M1 ×V1= M2 ×V2
   1000×V1 = 10 × 10
   V= 0,1 mL

c. Pembuatan kurva kalibrasi
   Larutan 2 ppm
   M1 ×V1= M2 ×V2
   1000 ×V1 = 2 × 10
   V= 0,02 mL

   Larutan 4 ppm
   M1 ×V1= M2 ×V2
   1000 × V1= 4 × 10
   V= 0,04 mL

   Larutan 6 ppm
   M1 ×V1= M2 ×V2
   1000 × V1 = 6 × 10
   V= 0,06 mL

   Larutan 8 ppm
   M1 ×V1= M2 ×V2
   1000 ×V = 8 × 10
   V= 0,08 mL

   Larutan 10 ppm
   M1 ×V1= M2 ×V2
   1000 × V1 = 10 × 10
   V= 0,1 mL

Lampiran 2.5 Penetapan kadar fenolik ekstrak

10 mg ekstrak dalam 50 mL larutan (stok 200 ppm)
M1 ×V1= M2 ×V2
200 × V1 = 50 × 10
V= 2,5 mL

Absorbansi = 0,699 ; 0,646; 0,757
Persamaan Conc=15,305.x + 0,375
Dimana x= absorbansi

Perhitungan:
Konsentrasi 1: 15,305 × 0,699 + 0,375 = 11,076 ppm
$\frac{11{,}076\ ppm}{50\ ppm} = \frac{0{,}110}{0{,}0005} = 220$ EAG/g ekstrak

Konsentrasi 2: 15,305 × 0,646 + 0,375 = 10,262 ppm
$\frac{10{,}262\ ppm}{50\ ppm} = \frac{0{,}102}{0{,}0005} = 204$ EAG/g ekstrak

Konsentrasi 3: 15,305 × 0,757+ 0,375 = 11,960 ppm
$\frac{11{,}960\ ppm}{50\ ppm} = \frac{0{,}119}{0{,}0005} = 238$ EAG/g ekstrak

$\bar{x} = \frac{220+204+238}{3} = 220{,}6$

$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(220-220{,}6)^2+(204-220{,}6)^2+(238-220{,}6)^2}{3-1}} = 17$

$\%RSD = \frac{SD}{X} x100\% = \frac{17}{220{,}6} x100\% = 7{,}7\%$

Lampiran 2.6 Penetapan Kadar Fenolik Sediaan

a. Penetapan Kadar Fenolik F0
10 mg *patch* dalam 10 mL larutan (stok 1000 ppm)
M1 ×V1= M2 ×V2
1000 × V1 = 50 × 10
V= 0,5 mL

Absorbansi = 0,172 ; 0,130; 0,150
Persamaan Conc= 15,305.x + 0,375
Dimana x= absorbansi

Perhitungan:
Konsentrasi 1: 15,305 × 0,172 + 0,375 = 3,00746 ppm
$\frac{3{,}00746\ ppm}{50\ ppm} = \frac{0{,}003}{0{,}00005} = 60$ mg EAG/g ekstrak

Konsentrasi 2: 15,305 × 0,130+ 0,375 = 2,36465 ppm
$\frac{2{,}36465\ ppm}{50\ ppm} = \frac{0{,}0024}{0{,}00005} =$48 mg EAG/g ekstrak

Konsentrasi 3: 15,305 × 0,150+ 0,375 = 2,67075 ppm
$\frac{2{,}67075\ ppm}{50\ ppm} = \frac{0{,}0027}{0{,}00005} = 54$ mg EAG/g ekstrak

$\bar{x} = \frac{60+48+54}{3} =$54 mg EAG/g

SD $= \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(60-54)^2+(46-54)^2+(54-54)^2}{3-1}} = 7{,}071$

%RSD $= \frac{SD}{X} x100\% = \frac{7{,}071}{54} x100\% = 13{,}09\%$

b. Penetapan Kadar Fenolik F2
10 mg *patch* dalam 10 mL larutan (stok 1000 ppm)
M1 ×V1= M2 ×V2
1000 × V1 = 50 × 10
V= 0,5 mL

Absorbansi = 0,198 ; 0,221; 0,214
Persamaan Conc= 15,305.x + 0,375
Dimana x= Absorbansi

Perhitungan
Konsentrasi 1: 15,305 × 0,198 + 0,375 = 3,40539 ppm
$\frac{3{,}40539\ ppm}{50\ ppm} = \frac{0{,}0034}{0{,}00005} = 68$ mg EAG/g ekstrak

Konsentrasi 2: 15,305 × 0,221+ 0,375 = 3,757405 ppm
$\frac{3{,}757405\ ppm}{50\ ppm} = \frac{0{,}0038}{0{,}00005} = 76$ mg EAG/g ekstrak

Konsentrasi 3: 15,305 × 0,214+ 0,375 = 3,65027 ppm
$\frac{3{,}65027\ ppm}{50\ ppm} = \frac{0{,}0037}{0{,}00005} = 74$ mg EAG/g ekstrak

$\bar{x} = \frac{68+76+74}{3} = 72{,}7$ mg EAG/g

SD $= \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(68-72{,}7)^2+(76-72{,}7)^2+(74-72{,}7)^2}{3-1}} = 4{,}163$

%RSD $= \frac{SD}{X} x100\% = \frac{4{,}163}{72{,}7} x100\% = 5{,}72\%$

c. Penetapan Kadar Fenolik F2
10 mg *patch* dalam 10 mL larutan (stok 1000 ppm)
M1 ×V1= M2 ×V2
1000 × V1 = 50 × 10
V= 0,5 mL

Absorbansi = 0,221 ; 0,209; 0,136
Persamaan Coc= 15,305.x + 0,375
Dimana x= Absorbansi

Perhitungan
Konsentrasi 1: 15,305 × 0,221 + 0,375 = 3,757405 ppm
$\frac{3{,}757405\ ppm}{50\ ppm} = \frac{0{,}0038}{0{,}00005}$ = 76 mg EAG/g ekstrak

Konsentrasi 2: 15,305 × 0,209+ 0,375 = 3,573745 ppm
$\frac{3{,}573745\ ppm}{50\ ppm} = \frac{0{,}0036}{0{,}00005}$ = 72 mg EAG/g ekstrak

Konsnetrasi 3: 15,305 × 0,136+ 0,375 = 2,45648ppm
$\frac{2{,}45648\ ppm}{50\ ppm} = \frac{0{,}0025}{0{,}00005}$ = 50 mg EAG/g ekstrak

$\bar{x} = \frac{76+72+50}{3}$ = 66 mg EAG/g

$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(76-66)^2+(72-66)^2+(50-66)^2}{3-1}} = 14$

$\%RSD = \frac{SD}{X} x100\% = \frac{14}{66} x100\% = 21{,}21\%$

d. Penetapan Kadar Fenolik F3
10 mg *patch* dalam 10 mL larutan (stok 1000 ppm)
M1 ×V1= M2 ×V2
1000 × V1 = 50 × 10
V= 0,5 mL

Absorbansi = 0,141 ; 0,151; 0,177
Persamaan Coc= 15,305.x + 0,375
Dimana x= Absorbansi

Perhitungan :
Kosnnetrasi 1: 15,305 × 0,141 + 0,375 = 2,53305 ppm
$\frac{2{,}53305\ ppm}{50\ ppm} = \frac{0{,}0024}{0{,}00005}$ = 48 mg EAG/g ekstrak

Konsentrasi 2: 15,305 × 0,151+ 0,375 = 2,686055 ppm
$\frac{2{,}686055\ ppm}{50\ ppm} = \frac{0{,}0027}{0{,}00005}$ = 54 mg EAG/g ekstrak

Konsnetrasi 3: 15,305 × 0,177 + 0,375 = 3,083985 ppm
$\frac{3{,}083985\ ppm}{50\ ppm} = \frac{0{,}0031}{0{,}00005}$ = 62 EAG/g ekstrak

$\bar{x} = \frac{48+54+62}{3}$ = 54,7 mg EAG/g

$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(48-54{,}7)^2+(54-54{,}7)^2+(62-54{,}7)^2}{3-1}} = 7{,}023$

$$\%RSD = \frac{SD}{X} x100\% = \frac{7,023}{54,7} x100\% = 12,83\%$$

Lampiran 2.7 Jumlah kumulatif terpenetrasi dan persen kumulatif

a. Contoh Perhitungan F0 pada jam ke-3
Dik: Abs 1= 0,034
Abs 2= 0,038
Abs 3= 0,017
Persamaan Conc: 15,305.x + 0,375
Dimana x= konsentrasi

Kandungan zat aktif dalam sediaan = 54 mg EAG/g
Faktor pengenceran (fp) = $\frac{\text{V labu tentukur}}{\text{V sampling}} = \frac{5 \text{ ml}}{1 \text{ ml}} = 5$

r = 0,5 cm
A = π × r2
= 3,14 × 5^2
= 0,785 cm^2

C0 = 0 µg/mL (1)
C0,5 = 3,02 µg/mL (1)
C1 = 3,55 µg/mL (1)
C2 = 4,09 µg/mL (1)

C0 = 0 µg/mL (2)
C0,5 = 4,24 µg/mL (2)
C1 = 6,31 µg/mL (2)
C2 = 4,78 µg/mL (2)

C0 = 0 µg/mL (3)
C0,5 = 3,17 µg/mL (3)
C1 = 5,24 µg/mL (3)
C2 = 4,53 µg/mL (3)

Dit : Q=?
% kum=?
Penyelesaian:
Replikasi 1: C3 = 15,305x + 0,375
= 15,305 × 0,034 + 0,375
= 0,895 ppm
Replikasi 2: C3 = 15,305x + 0,375
= 15,305 × 0,038 + 0,375
= 0,956 ppm
Replikasi 3: C3 = 15,305x + 0,375
= 15,305 × 0,017 + 0,375
= 0,635 ppm

Konsentrasi terdifusi (C3) = C × fp
Dimana C = konsentrasi terdifusi pada jam ke-n
fp= Faktor pengenceram

Replikasi 1: C3 = 0,895 × 5
= 4,47 ppm

Replikasi 2: C3 = C × fp
= 0,956 × 5
= 4,78 ppm

Replikasi 3: C3 = C × fp
= 0,635 × 5
= 3,17 ppm

Maka jumlah kumulatif terpenetrasi yaitu :

$$Qn = \frac{Cn \times V + \Sigma_{i=1}^{n-1} Ci \times S}{A}$$

Dimana:
- Q = Jumlah kumulatif terpenetrasi (µg/cm^2)
- C_n = jumlah terpenetrasi pada pengamilan ke-n (µg/mL)
- V = Volume sel (mL)
- Ci = jumlah yang terpenetrasi pada interval pengambilan sampel menit ke 0 hingga ke-n
- S = volume pengambilan sampel (mL)
- A = luas permukaan membran (cm^2)

Replikasi 1

$$Qn = \frac{4{,}47\ \frac{\mu g}{mL} \times 28\ mL + (0+3{,}02+3{,}55+4{,}09)\mu g mL \times 1\ mL}{0{,}785\ cm2} = \frac{135{,}82\ \mu g}{0{,}785\ cm2}$$

$$Qn = 173{,}01\ \mu g/cm2$$

Replikasi 2

$$Qn = \frac{Cn \times V + \Sigma_{i=1}^{n-1} Ci \times S}{A} = \frac{4{,}78\ \frac{\mu g}{mL} \times 28\ mL + (0+4{,}24+6{,}31+4{,}78)\mu g mL \times 1\ mL}{0{,}785\ cm2}$$

$$Qn = \frac{148{,}61\ \mu g}{0{,}785\ cm2}$$

$$Qn = 189{,}31\ \mu g/cm2$$

Replikasi 3

$$Qn = \frac{Cn \times V + \Sigma_{i=1}^{n-1} Ci \times S}{A} = \frac{3{,}17\ \frac{\mu g}{mL} \times 28\ mL + (0+3{,}17+5{,}24+4{,}55)\mu g mL \times 1\ mL}{0{,}785\ cm2}$$

$$Qn = \frac{101{,}76\ \mu g}{0{,}785\ cm2}$$

$$Qn = 129{,}57\ \mu g/cm2$$

$\bar{x} = \frac{173,01+189,31+129,57}{3} = 163,96\ \mu g/cm2$

$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(173,01-163,96)^2+(189,31-163,96)^2+(129,57-163,96)^2}{3-1}} = 30,880$

Penetapan %kumulatif
Kandungan zat aktif dalam sediaan=54 mg EAG/g
Replikasi 1
Bobot 1×1 cm sediaan (sediaan yang digunakan untuk uji difusi)= 0,0373 mg
Kandungan zat aktif dalam sampel (1×1) cm = $\frac{54\ mg}{1\ g} = \frac{x}{0,0373} = 2,041\ mg$
Konsentrasi sampel yang terpenetrasi (mg EAG/g)
Kandungan sampel yang terpenetrasi = 135,82 µg= 0,135 mg
$\frac{0,135}{2,041} = 0,066\ mg\ \frac{EAG}{g}$
% kumulatif = $\frac{\text{zat aktif yang terdifusi}}{\text{kandungan zat aktif dalam sediaan}}\ x\ 100\%$
% kumulatif = $\frac{0,066\ mg\ EAG/g}{54\ mg\ EAG/g}\ x\ 100\% = 0,122\%$

Replikasi 2
Bobot 1×1 cm sediaan (sediaan yang digunakan untuk uji difusi)=0,0412 mg
Kandungan zat aktif dalam sampel (1×1) cm = $\frac{54\ mg}{1\ g} = \frac{x}{0,0378} = 2,224\ mg$
Konsentrasi sampel yang terpenetrasi (mg EAG/g)
Kandungan sampel yang terpenetrasi = 148,61 µg=0,148 mg
$\frac{0,148}{2,224} = 0,066\ mg\ \frac{EAG}{g}$
% kumulatif = $\frac{\text{zat aktif yang terdifusi}}{\text{kandungan zat aktif dalam sediaan}}\ x\ 100\%$
% kumulatif = $\frac{0,066\ mg\ EAG/g}{54\ mg\ EAG/g}\ x\ 100\% = 0,122\%$

Replikasi 3
Bobot 1×1 cm sediaan (sediaan yang digunakan untuk uji difusi)=0,0378 mg
Kandungan zat aktif dalam sampel (1×1) cm = $\frac{54\ mg}{1\ g} = \frac{x}{0,0378} = 2,041\ mg$
Konsentrasi sampel yang terpenetrasi (mg EAG/g)
Kandungan sampel yang terpenetrasi = 101,76 µg=0,101mg
$\frac{0,101}{2,041} = 0,049\ mg\ \frac{EAG}{g}$
% kumulatif = $\frac{\text{zat aktif yang terdifusi}}{\text{kandungan zat aktif dalam sediaan}}\ x\ 100\%$
% kumulatif = $\frac{0,049\ mg\ EAG/g}{54\ mg\ EAG/g}\ x\ 100\% = 0,091\%$

$\bar{x} = \frac{0,122+0,122+0,091}{3} = 0,111\ \%$

$$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(0{,}122-0{,}111)^2+(0{,}122-0{,}111)^2+(0{,}091-0{,}111)^2}{3-1}} = 0{,}018$$

Lampiran 2.8 kecepatan penetrasi (pada 24 jam)

$$J = \frac{Q}{t}$$

Dimana:

J= Kecepatan penetrasi
Q= Jumlah kumulatif terpenetrasi
t = waktu (jam)

Replikasi 1

$$J = \frac{Q}{t} = \frac{374{,}39\ \mu g/cm2}{24} = 15{,}59\ \mu\ cm^{-2}/jam^{-1}$$

Replikasi 2

$$J = \frac{Q}{t} = \frac{353{,}82\ \mu g/cm2}{24} = 14{,}74\ \mu\ cm^{-2}/jam^{-1}$$

Replikasi 3

$$J = \frac{Q}{t} = \frac{346{,}99\ \mu g/cm2}{24} = 14{,}45\ \mu\ cm^{-2}/jam^{-1}$$

$$\bar{x} = \frac{15{,}59+14{,}74+14{,}45}{3} = 14{,}92\ \mu\ cm^{-2}/jam^{-1}$$

$$SD = \sqrt{\frac{\sum_{x=i}^{n} xi-x)^2}{n-1}} = \sqrt{\frac{(15{,}59-14{,}92)^2+(14{,}74-14{,}92)^2+(14{,}45-14{,}92)^2}{3-1}} = 0{,}53$$

Lampiran 3. Tabel Hasil Evaluasi

Lampiran 3.1 Hasil Uji Keseragaman Bobot

Formula	Replika 1 (mg)	Replika 2 (mg)	Replika 3 (mg)	Rata-rata	SD
F0	0,6625	0,5903	0,6378	0,6302	0,036
F1	0,6810	0,7042	0,7515	0,7122	0,035
F2	0,8333	0.8442	0,9205	0,866	0,047
F3	1,0402	0.9682	1,0482	1,0188	0,044

Lampiran 3.2 Hasil Uji Ketebalan *Patch*

Formula	Replika 1 (mm)	Replika 2 (mm)	Replika 3 (mm)	Rata-rata	SD
F0	0,24	0,23	0,236	0,235	0,005
F1	0,233	0,24	0,243	0,238	0,005
F2	0,296	0.30	0,306	0,30	0,005
F3	0,503	0.493	0,52	0,50	0,015

Lampiran 3.3 Hasil Uji *Moistrue Content (MC)*

Formula	Replika 1 (mm)	Replika 2 (mm)	Replika 3 (mm)	Rata-rata	SD
F0	12,45%	13,30%	11,54%	12,43%	0,88
F1	14,49%	13,63%	15,68%	14,6%	1,029
F2	17,49%	16,55%	19,73%	17,92%	1,633
F3	21,53%	19,58%	19,04%	20,05%	1,309

Lampiran 3.4 Hasil Uji Kadar Fenolik Sediaan

Formula	Abs (nm)	C (mg EAG/g)	ẋ	SD
F0	0,172	60		
	0,130	48	54	7,071
	0,150	54		
F1	0,198	68		
	0,221	76	72,7	4,163
	0,214	74		
F2	0,221	76		
	0,209	72	66	14
	0,136	50		
F3	0,141	48		
	0,151	54	54,7	7,023
	0,177	62		

Lampiran 3.5 Hasil Uji Difusi Sediaan F0

t (Jam)	Abs 1 (nm)	Abs 2 (nm)	Abs 3 (nm)	C1 (ppm)	C2 (ppm)	C3 (ppm)	Q1 (µg.cm^{-2})	Q2 (µg.cm^{-2})	Q3 (µg.cm^{-2})	ẋ (rata-rata Q)	SD
0,5	0,015	0,031	0,017	0,60	0,84	0,63	107,71	151,23	113,07	124	25,73
1	0,022	0,058	0,044	0,71	1,26	1,04	130,47	230,47	190,94	183,96	50,36
2	0,029	0,038	0,035	0,81	0,95	0,91	154,25	183,93	173,38	170,52	15,04
3	0,034	0,038	0,017	0,89	0,95	0,63	173,01	189,31	129,57	163,96	30,88
4	0,042	0,087	0,039	1,01	1,70	0,97	200,47	329,87	193,54	241,29	76,78
5	0,052	0,066	0,039	1,17	1,38	0,97	234,40	283,31	199,71	242,14	42,16
6	0,051	0,031	0,023	1,15	0,84	0,72	239	196,53	162,38	199,30	38,38
7	0,065	0,050	0,048	1,36	1,14	1,10	271,68	254,01	235,13	253,60	18,27
8	0,080	0,087	0,070	1,59	1,70	1,44	334,25	362,21	302,47	332,97	29,89
24	0,091	0,080	0,083	1,76	1,59	1,64	374,39	353,82	346,99	358,4	14,26

t (Jam)	%kum 1 (%)	%kum 2 (%)	%kum 3 (%)	ẋ	SD	J1 (µg.cm^{-2}.jam^{-1})	J2 (µg.cm^{-2}.jam^{-1})	J3 (µg.cm^{-2}.jam^{-1})	ẋ	SD
0,5	0,075	0,098	0,079	0,084	0,012	215,42	302,46	226,14	248	47,46
1	0,090	0,148	0,135	0,124	0,043	130,47	230,47	190,94	183,96	50,36
2	0,109	0,118	0,122	0,116	0,006	77,12	91,96	86,69	85,25	7,52
3	0,122	0,122	0.090	0,111	0,018	57,67	63,10	43,19	54,65	10,29
4	0,140	0,214	0,135	0,163	0,044	50,11	82,46	48,38	60,31	19,19
5	0,166	0,183	0,142	0,163	0,020	46,88	70,82	49,92	55,87	46,55
6	0,166	0,127	0,105	0,132	0,030	39,83	32,75	27,06	33,21	6,39
7	0,201	0,164	0,166	0,177	0,020	38,81	36,28	33,59	36,22	2,41
8	0,237	0,235	0,214	0,228	0,047	41,78	45,27	37,80	41,61	3,73
24	0,264	0,229	0,246	0,246	0,017	15,59	14,74	14,45	14,92	0,53

Lampiran 3. 6 Hasil Uji Difusi Sediaan F1

t (Jam)	Abs 1 (nm)	Abs 2 (nm)	Abs 3 (nm)	C1 (ppm)	C2 (ppm)	C3 (ppm)	Q1 (µg.cm^{-2})	Q2 (µg.cm^{-2})	Q3 (µg.cm^{-2})	ẋ (rata-rata Q)	SD
0,5	0,017	0,036	0,028	0,63	0,92	0,80	113,07	165,50	143,74	140,77	26,37
1	0,023	0,021	0,026	0,72	0,69	0,77	133,51	130,39	142,81	135,57	26,55
2	0,029	0,031	0,030	0,81	0,84	0,83	154,54	161,59	158,78	158,30	3,54
3	0,042	0,066	0,070	1,01	1,38	1,44	195,07	262,58	273,24	243,63	42,39
4	0,029	0,059	0,054	0,81	1,27	1,20	166,22	252,14	238,83	219,06	46,24
5	0,068	0,058	0,070	1,41	1,26	0,81	277,73	257,77	290,11	275,20	16,31
6	0,095	0,031	0,053	1,82	0,84	1,18	369,84	191,97	252,95	271,58	90,38
7	0,095	0,087	0,066	1,82	1,70	1,38	372,21	350,39	295,81	339,47	39,35
8	0,111	0,087	0,068	2,07	1,70	1,41	427,37	361,26	309,98	366,20	58,85
24	0,173	0,111	0,070	2,64	2,07	0,81	543,29	437,40	324,69	435,12	109,3

t (Jam)	%kum 1 (%)	%kum 2 (%)	%kum 3 (%)	ẋ	SD	J1 (µg.cm^{-2}.jam^{-1})	J2 (µg.cm^{-2}.jam^{-1})	J3 (µg.cm^{-2}.jam^{-1})	ẋ	SD
0,5	0,028	0,041	0,038	0,035	0,006	226,14	331	287,48	281,54	52,68
1	0,034	0,031	0,038	0,034	0,003	133,51	130,39	142,81	135,57	26,55
2	0,039	0,039	0,044	0,040	0,003	77,24	80,79	79,39	79,14	1,87
3	0,050	0,066	0,075	0,063	0,012	65,02	87,52	91,08	81,20	14,13
4	0,042	0,063	0,066	0,057	0,013	41,55	63,03	59,70	44,76	16,84
5	0,072	0,064	0,075	0,070	0,005	55,54	51,55	58,02	55,03	3,28
6	0,094	0,048	0,070	0,070	0,023	61,64	31,99	42,15	45,26	15,06
7	0,097	0,088	0,081	0,088	0,008	53,17	50,05	42,25	48,49	5,62
8	0,112	0,090	0,085	0,095	0,014	53,42	45,15	38,74	45,77	6,22
24	0,143	0,110	0,089	0,114	0,027	22,63	18,22	13,52	18,12	4,55

Lampiran 3.7 Hasil Uji Difusi Sediaan F2

t (Jam)	Abs 1 (nm)	Abs 2 (nm)	Abs 3 (nm)	C1 (ppm)	C2 (ppm)	C3 (ppm)	Q1 (µg.cm^{-2})	Q2 (µg.cm^{-2})	Q3 (µg.cm^{-2})	ẋ (rata-rata Q)	SD
0,5	0,037	0,040	0,015	0,56	0,98	0,60	100,94	175,84	107,71	131,49	41,62
1	0,055	0,069	0,048	1,21	1,43	1,10	220,47	261,31	201,45	227,74	30,58
2	0,032	0,019	0,023	0,86	0,66	0,72	165,43	133,80	140,38	146,53	27,07
3	0,043	0,076	0,015	1,03	1,53	0,60	200,90	293,91	123,24	206,01	85,44
4	0,055	0,054	0,023	1,21	1,20	0,72	240,29	214,29	148,85	201,14	47,11
5	0,043	0,040	0,039	1,03	0,98	0,97	215,22	212,91	196,99	208,37	9,92
6	0,067	0,040	0,039	1,40	0,98	0,97	287,49	219,19	203,17	236,61	44,77
7	0.073	0,033	0,067	1,49	0,88	1,40	312,75	206,56	286,10	268,47	55,24
8	0,060	0,033	0,132	1,29	0,88	2,39	286,58	212,17	472,23	323,66	133,9
24	0,073	0,061	0,083	1,49	1,30	1,64	330,48	294,11	353,72	326,10	30,04

t (Jam)	%kum 1 (%)	%kum 2 (%)	%kum 3 (%)	ẋ	SD	J1 (µg.cm^{-2}.jam^{-1})	J2 (µg.cm^{-2}.jam^{-1})	J3 (µg.cm^{-2}.jam^{-1})	ẋ	SD
0,5	0,027	0,051	0,030	0,036	0,013	201,88	351,68	215,42	256,32	82,85
1	0,062	0,075	0,057	0,064	0,013	220,47	261,31	201,45	227,74	30,58
2	0,045	0,037	0,039	0,040	0,004	82,71	66,90	70,19	73,26	8,34
3	0,056	0,084	0,034	0,058	0,025	66,96	97,97	41,08	68,67	28,48
4	0,068	0,071	0,042	0,060	0,015	60,07	53,57	37,21	50,28	11,77
5	0,060	0,062	0,056	0,059	0,003	43,04	42,58	39,39	41,67	1,98
6	0,080	0,063	0,057	0,066	0,011	47,91	36,53	33,86	39,43	7,46
7	0,087	0,060	0,081	0,068	0,017	44,67	29,50	40,87	38,34	7,89
8	0,080	0,060	0,136	0,092	0,039	35,83	26,52	59,15	40,50	16,80
24	0,093	0,084	0,101	0,092	0,008	13,77	12,25	14,73	13,58	1,25

Lampiran 3.8 Hasil Uji Difusi Sediaan F3

t (Jam)	Abs 1 (nm)	Abs 2 (nm)	Abs 3 (nm)	C1 (ppm)	C2 (ppm)	C3 (ppm)	Q1 (µg.cm^{-2})	Q2 (µg.cm^{-2})	Q3 (µg.cm^{-2})	ẋ (rata-rata Q)	SD
0,5	0,022	0,032	0,015	0,71	0,86	0,60	128,15	154,08	107,71	129,98	23,23
1	0,035	0,059	0,043	0,91	1,27	1,03	166,84	233,07	187,89	195,93	33,83
2	0,029	0,032	0,029	0,81	0,86	0,81	156,22	167,71	156,30	160,07	6,61
3	0,047	0,059	0,054	1,09	1,27	1,20	210,66	246,70	229,89	229,08	18,11
4	0,040	0,052	0,043	0,98	1,17	1,03	198,36	235,92	207,33	213,87	19,61
5	0,052	0,067	0,048	1,17	1,40	1,10	237,46	284,46	227,46	249,79	30,42
6	0,063	0,059	0,053	1,33	1,27	1,18	274,87	271,2	248,42	264,83	14,32
7	0,049	0,074	0,067	1,12	1,50	1,40	245,23	320,34	294,22	286,59	38,12
8	0,058	0,038	0,039	1,26	0,95	0,97	277,00	231,84	226,38	245,07	27,78
24	0,063	0,067	0,070	1,33	1,40	1,44	298,59	317,19	317,45	311,07	9,83

t (Jam)	%kum 1 (%)	%kum 2 (%)	%kum 3 (%)	ẋ	SD	J1 (µg.cm^{-2}.jam^{-1})	J2 (µg.cm^{-2}.jam^{-1})	J3 (µg.cm^{-2}.jam^{-1})	ẋ	SD
0,5	0,043	0,047	0,036	0,042	0,005	256,30	308,16	215,42	259,96	46,47
1	0,056	0,073	0,065	0,064	0,008	166,84	233,07	187,89	195,93	33,83
2	0,053	0,053	0,054	0,053	0,000	78,10	83,85	78,15	80,03	3,30
3	0,067	0,074	0,080	0,073	0,006	70,22	82,23	76,63	76,36	6,00
4	0,067	0,074	0,073	0,071	0,003	49,59	58,98	51,83	53,46	4,90
5	0,082	0,084	0,080	0,082	0,002	47,49	56,89	45,49	49,95	6,08
6	0,095	0,084	0,087	0,088	0,005	45,81	45,20	41,40	44,13	2,38
7	0,084	0,100	0,104	0,096	0,010	35,03	45,76	42,03	40,94	5,44
8	0,095	0,073	0,080	0,082	0,011	34,62	28,98	28,29	30,63	3,47
24	0,102	0,098	0,113	0,104	0,007	12,44	13,21	13,22	12,95	0,44

Keterangan tabel:
t = Waktu (jam)
Abs = Absorbansi (nm)
C = Jumlah terpenetrasi (ppm)
Q = Jumlah kumulatif terpenetrasi (µg.cm^{-2})
%kum= persen kumulatif terpenetrasi (%)
J = Kecepatan penetrasi (µg.cm^{-2}.jam^{-1})

Lampiran 4. Data Analisis Hasil Statistika

Lampiran 4.1 Uji Keseragaman Bobot

One-Sample Kolmogorov-Smirnov Test

		Formula
N		12
Normal Parameters[a,b]	Mean	2.50
	Std. Deviation	1.168
Most Extreme Differences	Absolute	.166
	Positive	.166
	Negative	-.166
Test Statistic		.166
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Multiple Comparisons

Dependent Variable: Bobot

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 0	Formula 1	-.0820333	.0337545	.148	-.190127	.026061
	Formula 2	-.2358000*	.0337545	.001	-.343894	-.127706
	Formula 3	-.3886667*	.0337545	.000	-.496761	-.280573
Formula 1	Formula 0	.0820333	.0337545	.148	-.026061	.190127
	Formula 2	-.1537667*	.0337545	.008	-.261861	-.045673
	Formula 3	-.3066333*	.0337545	.000	-.414727	-.198539
Formula 2	Formula 0	.2358000*	.0337545	.001	.127706	.343894
	Formula 1	.1537667*	.0337545	.008	.045673	.261861
	Formula 3	-.1528667*	.0337545	.008	-.260961	-.044773
Formula 3	Formula 0	.3886667*	.0337545	.000	.280573	.496761
	Formula 1	.3066333*	.0337545	.000	.198539	.414727
	Formula 2	.1528667*	.0337545	.008	.044773	.260961

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

Lampiran 4.2 Uji Ketebalan *Patch*

One-Sample Kolmogorov-Smirnov Test

		Formula
N		12
Normal Parameters[a,b]	Mean	2.50
	Std. Deviation	1.168
Most Extreme Differences	Absolute	.166
	Positive	.166
	Negative	-.166
Test Statistic		.166
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Multiple Comparisons

Dependent Variable: Ketebalan

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 0	Formula 1	-.003333	.006625	.956	-.02455	.01788
	Formula 2	-.065333*	.006625	.000	-.08655	-.04412
	Formula 3	-.270000*	.006625	.000	-.29122	-.24878
Formula 1	Formula 0	.003333	.006625	.956	-.01788	.02455
	Formula 2	-.062000*	.006625	.000	-.08322	-.04078
	Formula 3	-.266667*	.006625	.000	-.28788	-.24545
Formula 2	Formula 0	.065333*	.006625	.000	.04412	.08655
	Formula 1	.062000*	.006625	.000	.04078	.08322
	Formula 3	-.204667*	.006625	.000	-.22588	-.18345
Formula 3	Formula 0	.270000*	.006625	.000	.24878	.29122
	Formula 1	.266667*	.006625	.000	.24545	.28788
	Formula 2	.204667*	.006625	.000	.18345	.22588

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

Lampiran 4.3 Uji *Moisture Content (MC)*

One-Sample Kolmogorov-Smirnov Test

		Formula
N		12
Normal Parameters[a,b]	Mean	2.50
	Std. Deviation	1.168
Most Extreme Differences	Absolute	.166
	Positive	.166
	Negative	-.166
Test Statistic		.166
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Multiple Comparisons

Dependent Variable: Kandungan Lembab

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 0	Formula 1	-2.17000	1.01809	.222	-5.4303	1.0903
	Formula 2	-5.49333*	1.01809	.003	-8.7536	-2.2331
	Formula 3	-7.62000*	1.01809	.000	-10.8803	-4.3597
Formula 1	Formula 0	2.17000	1.01809	.222	-1.0903	5.4303
	Formula 2	-3.32333*	1.01809	.046	-6.5836	-.0631
	Formula 3	-5.45000*	1.01809	.003	-8.7103	-2.1897
Formula 2	Formula 0	5.49333*	1.01809	.003	2.2331	8.7536
	Formula 1	3.32333*	1.01809	.046	.0631	6.5836
	Formula 3	-2.12667	1.01809	.235	-5.3869	1.1336
Formula 3	Formula 0	7.62000*	1.01809	.000	4.3597	10.8803
	Formula 1	5.45000*	1.01809	.003	2.1897	8.7103
	Formula 2	2.12667	1.01809	.235	-1.1336	5.3869

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

Lampiran 4.4 Uji Jumlah Kumulatif Terpenetrasi

One-Sample Kolmogorov-Smirnov Test

		Jumlah kumulatif
N		120
Normal Parameters[a,b]	Mean	234.6975
	Std. Deviation	83.02596
Most Extreme Differences	Absolute	.073
	Positive	.073
	Negative	-.055
Test Statistic		.073
Asymp. Sig. (2-tailed)		.172[c]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Multiple Comparisons

Dependent Variable: Jumlah kumulatif

Tukey HSD

		Mean Difference			95% Confidence Interval	
(I) Formula	(J) Formula	(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Formula 0	Formula 1	-31.10933	21.42753	.470	-86.9637	24.7451
	Formula 2	-.56600	21.42753	1.000	-56.4204	55.2884
	Formula 3	-.24800	21.42753	1.000	-56.1024	55.6064
Formula 1	Formula 0	31.10933	21.42753	.470	-24.7451	86.9637
	Formula 2	30.54333	21.42753	.486	-25.3111	86.3977
	Formula 3	30.86133	21.42753	.477	-24.9931	86.7157
Formula 2	Formula 0	.56600	21.42753	1.000	-55.2884	56.4204
	Formula 1	-30.54333	21.42753	.486	-86.3977	25.3111
	Formula 3	.31800	21.42753	1.000	-55.5364	56.1724
Formula 3	Formula 0	.24800	21.42753	1.000	-55.6064	56.1024
	Formula 1	-30.86133	21.42753	.477	-86.7157	24.9931
	Formula 2	-.31800	21.42753	1.000	-56.1724	55.5364

Lampiran 4.5 Uji Persen Kumulatif Terpenetrasi

One-Sample Kolmogorov-Smirnov Test

		Persen Kumulatif
N		120
Normal Parameters[a,b]	Mean	.09057
	Std. Deviation	.050266
Most Extreme Differences	Absolute	.163
	Positive	.163
	Negative	-.103
Test Statistic		.163
Asymp. Sig. (2-tailed)		.000[c]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Multiple Comparisons

Dependent Variable: Persen Kumulatif

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Formula 0	Formula 1	.087667*	.008771	.000	.06480	.11053
	Formula 2	.090133*	.008771	.000	.06727	.11300
	Formula 3	.078867*	.008771	.000	.05600	.10173
Formula 1	Formula 0	-.087667*	.008771	.000	-.11053	-.06480
	Formula 2	.002467	.008771	.992	-.02040	.02533
	Formula 3	-.008800	.008771	.748	-.03166	.01406
Formula 2	Formula 0	-.090133*	.008771	.000	-.11300	-.06727
	Formula 1	-.002467	.008771	.992	-.02533	.02040
	Formula 3	-.011267	.008771	.575	-.03413	.01160
Formula 3	Formula 0	-.078867*	.008771	.000	-.10173	-.05600
	Formula 1	.008800	.008771	.748	-.01406	.03166
	Formula 2	.011267	.008771	.575	-.01160	.03413

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

Lampiran 4.6 Uji Kecepatan Penetrasi *(fluks)*

One-Sample Kolmogorov-Smirnov Test

		Fluks
N		120
Normal Parameters[a,b]	Mean	83.8286
	Std. Deviation	77.54879
Most Extreme Differences	Absolute	.258
	Positive	.258
	Negative	-.178
Test Statistic		.258
Asymp. Sig. (2-tailed)		.000[c]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Multiple Comparisons

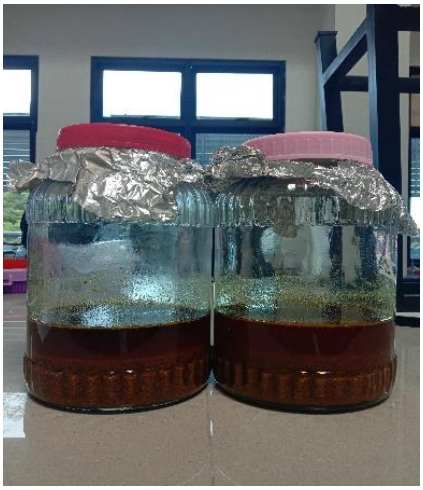
Dependent Variable: Fluks

Tukey HSD

		Mean			95% Confidence Interval	
(I) Formula	(J) Formula	Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Formula 0	Formula 1	-3.08467	20.27687	.999	-55.9397	49.7703
	Formula 2	-3.57733	20.27687	.998	-56.4323	49.2777
	Formula 3	-3.03233	20.27687	.999	-55.8873	49.8227
Formula 1	Formula 0	3.08467	20.27687	.999	-49.7703	55.9397
	Formula 2	-.49267	20.27687	1.000	-53.3477	52.3623
	Formula 3	.05233	20.27687	1.000	-52.8027	52.9073
Formula 2	Formula 0	3.57733	20.27687	.998	-49.2777	56.4323
	Formula 1	.49267	20.27687	1.000	-52.3623	53.3477
	Formula 3	.54500	20.27687	1.000	-52.3100	53.4000
Formula 3	Formula 0	3.03233	20.27687	.999	-49.8227	55.8873
	Formula 1	-.05233	20.27687	1.000	-52.9073	52.8027
	Formula 2	-.54500	20.27687	1.000	-53.4000	52.3100

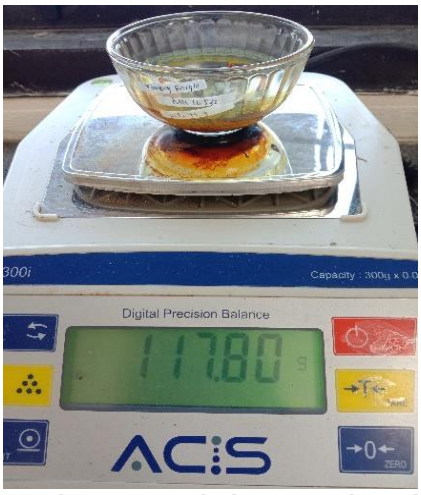
Lampiran 5. Gambar Penelitian

Gambar 16. Penimbangan simplisia dengan timbangan duduk (Camry®)



Gambar 17. Maserasi simplisia 200 g dengan pelarut etanol 70% sebanyak 2 L

Gambar 18. Penguapan ekstrak dengan alat rotary evaporator (heildoph®)

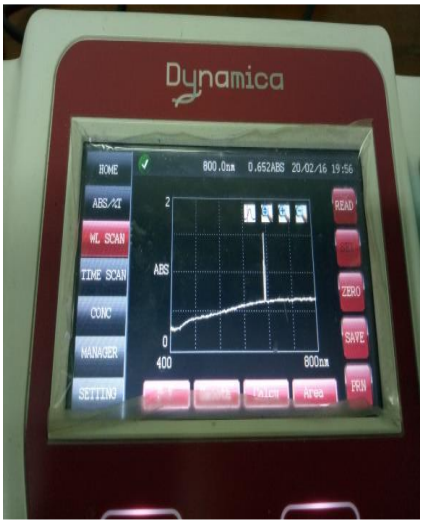


Gambar 19. Penimbangan ekstrak dengan timbangan digital (Acis®)

Gambar 20. Pengadukan bahan dengan menggunakan alat magnetic stirrer (Cimarec®)

Gambar 21. Penimbangan *Patch* dengan timbangan analitik (Ohaus®)

Gambar 22. Pengukuran Ketebalan *Patch* dengan jangka sorong digital (Nankai®)



Gambar 23. Penentuan panjang gelombang maskismum baku asam galat dengan spektrofoto-metri UV-VIS (Dynamica® HALO XB-10)

Gambar 24. Hasil kurva kalibrasi yang diukur dengan menggunakan spektrofotometri UV-VIS (Dynamica® HALO XB-10)

Gambar 25. Pengadukan sampel *patch* dengan alat ultrasonikasi (Krisbow®)

Gambar 26. Uji Difusi dengan alat difusi franz