LAMPIRAN

1. **Pembuatan larutan DPPH 40 ppm (0,04mM)**

   Konsentrasi 1 ppm setara dengan 1µg/mL maka untuk membuat larutan induk DPPH dengan konsentrasi 100 ppm dilakukan dengan menimbang 10 mg DPPH pada labu ukur 100 mL dan dilarutkan dengan etanol p.a hingga tanda batas.

   Zat terlarut (mg) = Konsentrasi (ppm) x volume (mL)

   Zat terlarut (mg) = 40 ppm x 100 mL (0,1 L)

   Zat terlarut = 4 mg

2. **Pembuatan Larutan Etanol 50%**

   Larutan etanol 50% dibuat sebanyak 500 mL dengan mengencerkan dari larutan etanol 70%

   $$C1 \times V1 = C2 \times V2$$

   Keterangan:

   C1 = Konsentrasi awal etanol 70%

   V1 = Volume larutan etanol 70% yang dibutuhkan

   M2 = Konsentrasi akhir etanol 50%

   V2 = Volume larutan yang dibuat

   C1 x V1 = C2 x V2

   70% x V1 = 50% x 500 mL

   70% x V1 = 25000

   $$V1 = \frac{25000}{70}$$

   V1 = 357,14 mL

   V1 = 357 mL

   Maka sebanyak 357 mL larutan etanol 70% dilarutkan dengan aquadest(143 mL) pada labu ukur 500 mL hingga tanda batas.

3. Pembuatan Larutan Seri Asam Askorbat

M1 x V1 = M2 xV2

Keterangan:

M1 = Konsentrasi larutan induk

V1 = Volume larutan induk

M1 = Konsentrasi larutan baku kerja

V1 = Volume larutan baku kerja

- Konsentrasi 20 ppm

  1000 ppm x V1 = 2 ppm x 10 ml

  V1 = $\frac{20}{1000}$

  V1 = $0{,}02\ ml$

  V1 = 20 µl

- Konsentrasi 40 ppm

  1000 ppm x V1 = 40 ppm x 10 ml

  V1 = $\frac{40}{1000}$

  V1 = $0{,}04\ ml$

  V1 = 40 µl

- Konsentrasi 60 ppm

  1000 ppm x V1 = 60 ppm x 10 ml

  V1 = $\frac{60}{1000}$

  V1 = $0{,}06ml$

  V1 = 60 µl

- Konsentrasi 80 ppm

  1000 ppm x V1 = 80 ppm x 10 ml

  V1 = $\frac{80}{1000}$

  V1 = $0{,}08\ ml$

  V1 = 80 µl

- Konsentrasi 100 ppm

  1000 ppm x V1 = 100 ppm x 10 ml

  V1 = $\frac{100}{1000}$

V1 = 0,1 ml

V1 = 100 µl

4. Pembuatan Larutan Seri Sampel Ekstrak Kulit Salak

M1 x V1 = M2 xV2

- Konsentrasi 20 ppm

  1000 ppm x V1 = 20 ppm x 5 ml

  V1 = $\frac{100}{1000}$

  V1 = 0,1 ml

  V1 = 100 µl

- Konsentrasi 40 ppm

  1000 ppm x V1 = 40 ppm x 5 ml

  V1 = $\frac{200}{1000}$

  V1 = 0,2 ml

  V1 = 200 µl

- Konsentrasi 60 ppm

  1000 ppm x V1 = 60 ppm x 5 ml

  V1 = $\frac{300}{1000}$

  V1 = 0,3ml

  V1 = 300 µl

- Konsentrasi 80 ppm

  1000 ppm x V1 = 80 ppm x 5 ml

  V1 = $\frac{400}{1000}$

  V1 = 0,4 ml

  V1 = 400 µl

- Konsentrasi 100 ppm

  1000 ppm x V1 = 100 ppm x 5 ml

  V1 = $\frac{500}{1000}$

  V1 = 0,5 ml

  V1 = 500 µl

5. Perhitungan Inhibisi % Sampel Ekstrak

$$\text{Inhibisi (\%)} = \frac{Abs\ Blanko - Abs\ Sampel}{Abs\ Blanko} x100\%$$

a. Sampel ekstrak etanol kulit salak 96% Replikasi 1

- Konsentrasi 20 ppm

  $\text{Inhibisi (\%)} = \frac{0{,}9468-0{,}3656}{0{,}9468} x100\%$

  Inhibisi (%) = 61,38%

- Konsentrasi 40 ppm

  $\text{Inhibisi (\%)} = \frac{0{,}9468-0{,}3324}{0{,}9468} x100\%$

  Inhibisi (%) = 64,89%

- Konsentrasi 60 ppm

  $\text{Inhibisi (\%)} = \frac{0{,}9468-0{,}3174}{0{,}9468} x100\%$

  Inhibisi (%) = 66,47%

- Konsentrasi 80 ppm

  $\text{Inhibisi (\%)} = \frac{0{,}9468-0{,}3127}{0{,}9468} x100\%$

  Inhibisi (%) = 66,97%

- Konsentrasi 100 ppm

  $\text{Inhibisi (\%)} = \frac{0{,}9468-0{,}2825}{0{,}9468} x100\%$

  Inhibisi (%) = 70,16%

b. Inhibisi (%) = Sampel ekstrak etanol kulit salak 96% Replikasi 2

- Konsentrasi 20 ppm

  $\text{Inhibisi (\%)} = \frac{0{,}9468-0{,}3870}{0{,}9468} x100\%$

  Inhibisi (%) = 59,13%

- Konsentrasi 40 ppm

  $\text{Inhibisi (\%)} = \frac{0{,}9468-0{,}3593}{0{,}9468} x100\%$

  Inhibisi (%) = 62,05%

- Konsentrasi 60 ppm

  $\text{Inhibisi (\%)} = \frac{0{,}9468-0{,}3048}{0{,}9468} x100\%$

  Inhibisi (%) = 67,81%

- Konsentrasi 80 ppm

  Inhibisi (%) = $\frac{0,9468-0,2993}{0,9468}$ $x100\%$

  Inhibisi (%) = 68,39%

- Konsentrasi 100 ppm

  Inhibisi (%) = $\frac{0,9468-0,2677}{0,9468}$ $x100\%$

  Inhibisi (%) = 71,73%

c. Inhibisi (%) = Sampel ekstrak etanol kulit salak 96% Replikasi 3

- Konsentrasi 20 ppm

  Inhibisi (%) = $\frac{0,9468-0,3591}{0,9468}$ $x100\%$

  Inhibisi (%) = 62,07%

- Konsentrasi 40 ppm

  Inhibisi (%) = $\frac{0,9468-0,3041}{0,9468}$ $x100\%$

  Inhibisi (%) = 67,88%

- Konsentrasi 60 ppm

  Inhibisi (%) = $\frac{0,9468-0,2922}{0,9468}$ $x100\%$

  Inhibisi (%) = 68,39%

- Konsentrasi 80 ppm

  Inhibisi (%) = $\frac{0,9468-0,2365}{0,9468}$ $x100\%$

  Inhibisi (%) = 75,02%

- Konsentrasi 100 ppm

  Inhibisi (%) = $\frac{0,9468-0,1965}{0,9468}$ $x100\%$

  Inhibisi (%) = 79,25%

d. Sampel ekstrak etanol kulit salak 70% Replikasi 1

- Konsentrasi 20 ppm

  Inhibisi (%) = $\frac{0,9468-0,6748}{0,9468}$ $x100\%$

  Inhibisi (%) = 28,72%

- Konsentrasi 40 ppm

  Inhibisi (%) = $\frac{0,9468-0,6094}{0,9468}$ $x100\%$

Inhibisi (%) = 35,63%

- Konsentrasi 60 ppm

  Inhibisi (%) = $\frac{0,9468-0,5975}{0,9468}$ $x100\%$

  Inhibisi (%) = 36,89%

- Konsentrasi 80 ppm

  Inhibisi (%) = $\frac{0,9468-0,5154}{0,9468}$ $x100\%$

  Inhibisi (%) = 45,56%

- Konsentrasi 100 ppm

  Inhibisi (%) = $\frac{0,9468-0,5128}{0,9468}$ $x100\%$

  Inhibisi (%) = 45,84%

e. Inhibisi (%) = Sampel ekstrak etanol kulit salak 70% Replikasi 2

- Konsentrasi 20 ppm

  Inhibisi (%) = $\frac{0,9468-0,6274}{0,9468}$ $x100\%$

  Inhibisi (%) = 28,98%

- Konsentrasi 40 ppm

  Inhibisi (%) = $\frac{0,9468-0,6084}{0,9468}$ $x100\%$

  Inhibisi (%) = 35,74%

- Konsentrasi 60 ppm

  Inhibisi (%) = $\frac{0,9468-0,5984}{0,9468}$ 100%

  Inhibisi (%) = 36,80%

- Konsentrasi 80 ppm

  Inhibisi (%) = $\frac{0,9468-0,5137}{0,9468}$ $x100\%$

  Inhibisi (%) = 45,74%

- Konsentrasi 100 ppm

  Inhibisi (%) = $\frac{0,9468-0,4969}{0,9468}$ $x100\%$

  Inhibisi (%) = 47,52%

f. Inhibisi (%) = Sampel ekstrak etanol kulit salak 70% Replikasi 3

- Konsentrasi 20 ppm

Inhibisi (%) = $\frac{0,9468-0,6848}{0,9468}$ $x100\%$

Inhibisi (%) = 28,78%

- Konsentrasi 40 ppm

Inhibisi (%) = $\frac{0,9468-0,6094}{0,9468}$ $x100\%$

Inhibisi (%) = 35,64%

- Konsentrasi 60 ppm

Inhibisi (%) = $\frac{0,9468-0,5904}{0,9468}$ $x100\%$

Inhibisi (%) = 37,61%

- Konsentrasi 80 ppm

Inhibisi (%) = $\frac{0,9468-0,5377}{0,9468}$ $x100\%$

Inhibisi (%) = 43,21%

- Konsentrasi 100 ppm

Inhibisi (%) = $\frac{0,9468-0,4588}{0,9468}$ $x100\%$

Inhibisi (%) = 51,86%

g. Sampel ekstrak etanol kulit salak 50% Replikasi 1

- Konsentrasi 20 ppm

Inhibisi (%) = $\frac{0,9468-0,6714}{0,9468}$ $x100\%$

Inhibisi (%) = 29,09%

- Konsentrasi 40 ppm

Inhibisi (%) = $\frac{0,9468-0,6552}{0,9468}$ $x100\%$

Inhibisi (%) = 30,80%

- Konsentrasi 60 ppm

Inhibisi (%) = $\frac{0,9468-0,5851}{0,9468}$ $x100\%$

Inhibisi (%) = 38,21%

- Konsentrasi 80 ppm

Inhibisi (%) = $\frac{0,9468-0,5787}{0,9468}$ $x100\%$

Inhibisi (%) = 38,88%

- Konsentrasi 100 ppm

Inhibisi (%) = $\frac{0,9468-0,4529}{0,9468}$ $x100\%$

Inhibisi (%) = 52,17%

h. Inhibisi (%) Sampel ekstrak etanol kulit salak 50% Replikasi 2

- Konsentrasi 20 ppm

  Inhibisi (%) = $\frac{0,9468-0,6724}{0,9468}$ $x100\%$

  Inhibisi (%) = 29,98%

- Konsentrasi 40 ppm

  Inhibisi (%) = $\frac{0,9468-0,6262}{0,9468}$ $x100\%$

  Inhibisi (%) = 33,86%

- Konsentrasi 60 ppm

  Inhibisi (%) = $\frac{0,9468-0,6245}{0,9468}$ $x100\%$

  Inhibisi (%) = 34,04%

- Konsentrasi 80 ppm

  Inhibisi (%) = $\frac{0,9468-0,5903}{0,9468}$ $x100\%$

  Inhibisi (%) = 37,61%

- Konsentrasi 100 ppm

  Inhibisi (%) = $\frac{0,9468-0,3062}{0,9468}$ $x100\%$

  Inhibisi (%) = 51,86%

i. Inhibisi (%) = Sampel ekstrak etanol kulit salak 50% Replikasi 3

- Konsentrasi 20 ppm

  Inhibisi (%) = $\frac{0,9468-0,6731}{0,9468}$ $x100\%$

  Inhibisi (%) = 51,86%

- Konsentrasi 40 ppm

  Inhibisi (%) = $\frac{0,9468-0,6536}{0,9468}$ $x100\%$

  Inhibisi (%) = 30,97%

- Konsentrasi 60 ppm

  Inhibisi (%) = $\frac{0,9468-0,5907}{0,9468}$ $x100\%$

  Inhibisi (%) = 37,61%

- Konsentrasi 80 ppm

  Inhibisi (%) = $\frac{0,9468-0,5850}{0,9468}$ $x100\%$

  Inhibisi (%) = 38,21%

- Konsentrasi 100 ppm

  Inhibisi (%) = $\frac{0,9468-0,4559}{0,9468}$ $x100\%$

  Inhibisi (%) = 51,85%

6. Perhitungan Nilai IC50

1. Sampel Ekstrak Etanol Kulit Salak 96%

- Replikasi 1

  y = 0,0982x + 60,088

  50 = 0,0982x + 60,088

  50-60, 088 = 0,0982x

  102, = x

- Replikasi 2

  y = 0,1577x + 56,358

  50 = 0,1577x + 56,358

  50-56, 358= 0,1577x

  40,32 = x

- Replikasi 3

  y = 0,2074x + 58,226

  50 = 0,2074x + 58,226

  50-58,226= 0,2074x

  39,66 = x

2. Sampel Ekstrak Etanol Kulit Salak 70%

- Replikasi 1

y = 0,2207x + 25,287

50 = 0,2297x + 25,287

50-25,287= 0,2297x

111,98 = x

- Replikasi 2

y = 0,2692x + 24,834

50 = 0,2692x + 24,834

50-0,2692= 0,2692x

106,91 = x

- Replikasi 3

y = 0,2719x + 21,458

50 = 0,2719x + 21,258

50-21,258= 0,2714x

99,34 = x

3. Sampel Ekstrak Etanol Kulit Salak 50%

- Replikasi 1

y = 0,2712x + 21,556

50 = 0,2712x + 21,556

50-21,556= 0,2712

104,88 = x

- Replikasi 2

y = 0,2336x + 22,982

50 = 0,2336x + 22,982

50-22,982= 0,2336x

115,66 = x

- Replikasi 3

y = 0,2656x + 21,572

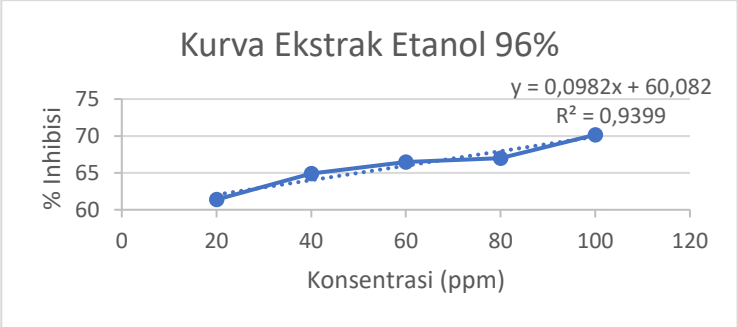
50 = 0,2656x + 21,572

50-21,572= 0,2656x

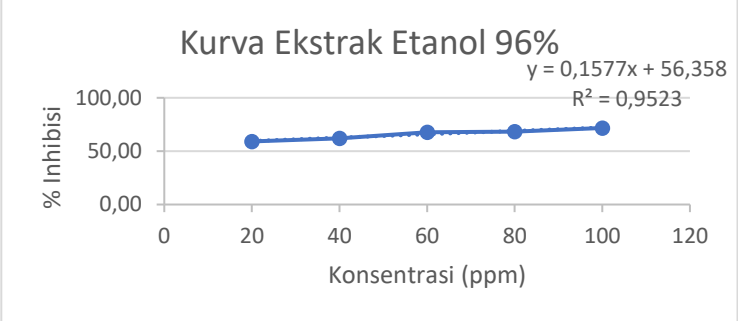
107,03 = x

4. Kurva Uji Aktivitas Antioksidan

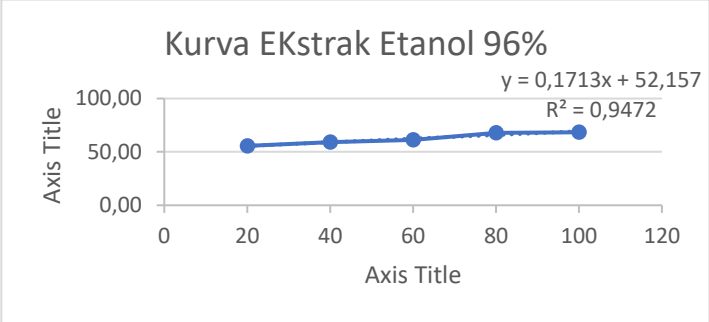
- Kurva Sampel Ekstrak Etanol Kulit Salak 96% Replikasi 1



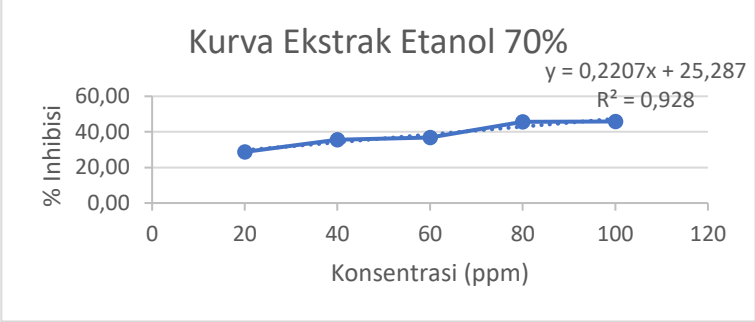
- Kurva Sampel Ekstrak Etanol Kulit Salak 96% Replikasi 2



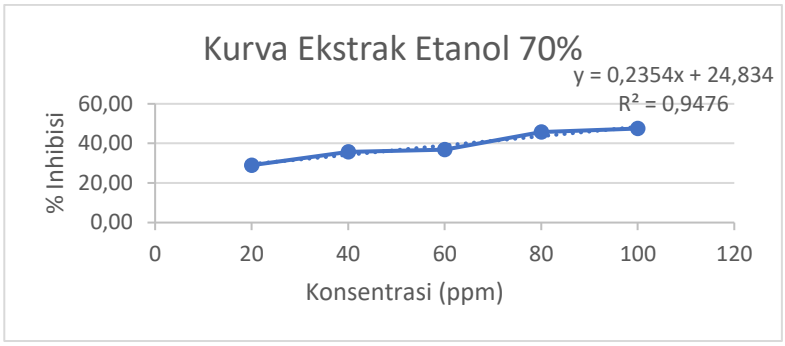
- Kurva Sampel Ekstrak Etanol Kulit Salak 96% Replikasi 3



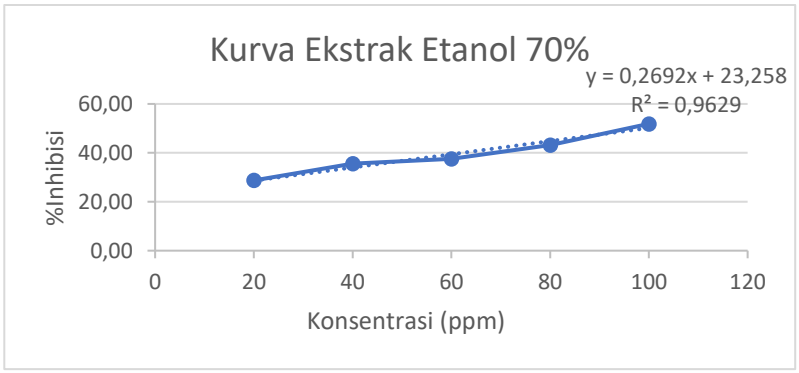
- Kurva Sampel Ekstrak Etanol Kulit Salak 70% Replikasi 1



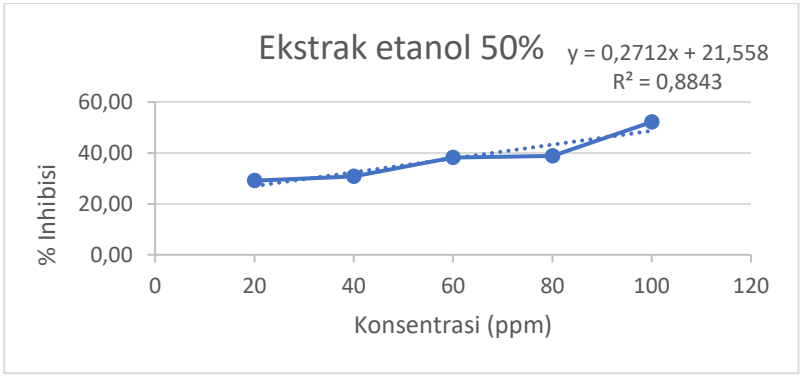
- Kurva Sampel Ekstrak Etanol Kulit Salak 70% Replikasi 2



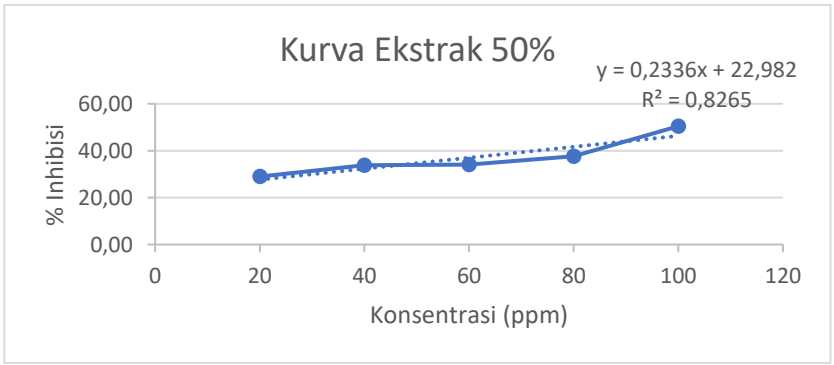
- Kurva Sampel Ekstrak Etanol Kulit Salak 70% Replikasi 3



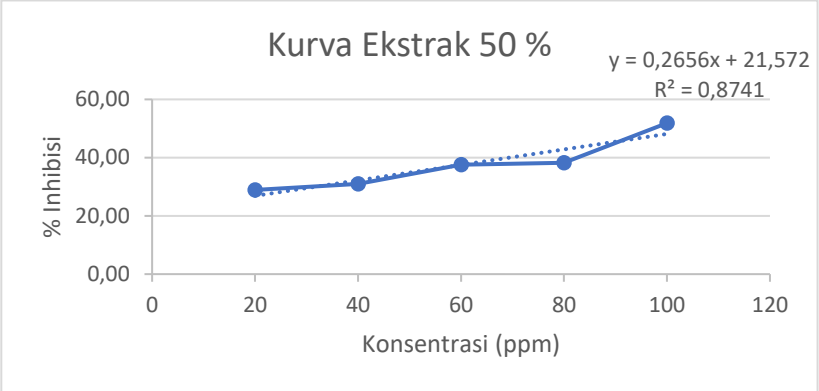
- Kurva Sampel Ekstrak Etanol Kulit Salak 50% Replikasi 1



- Kurva Sampel Ekstrak Etanol Kulit Salak 50% Replikasi 2



- Kurva Sampel Ekstrak Etanol Kulit Salak 50% Replikasi 3



Lampiran Foto Dokumentasi

 Penimbangan sampel kulit salak	 Proses pengeringan kulit salak dengan menggunakan sinar matahari	 Proses penghalusan sampel
 Penimbangan serbuk kulit salak	 Proses maserasi kulit salak	 Penyaringan hasil maserasi
		 Pembuatan larutan sampel

Pengentalan ekstrak menggunakan waterbath	Hasil ekstrak kental	