L A M P I R A N

Lampiran 1. Gambar penelitian

1. Gambar bahan penelitian

a. Gambar buah kurma ajwa

b. Gambar buah kurma deglet noor

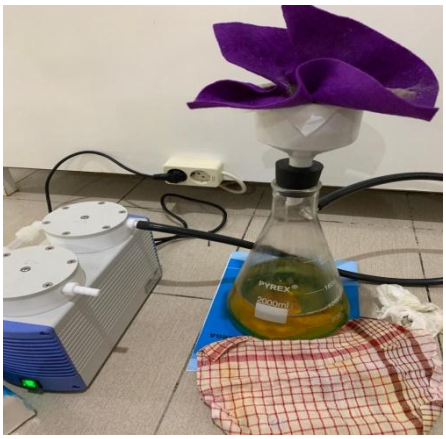
2. Proses maserasi

a. Penimbangan buah deglet noor

b. penimbangan buah kurma ajwa

c. botol sampel buah kurma ajwa

d. Botol sampel buah kurma deglet noor



e. proses penyaringan buah deglet noor

f. Proses penyaringan kurma ajwa

g. Gambar alat evaporator.

h. ekstrak kental kurma ajwa dan deglet noor.

Lampiran 2. Perhitungan rendemen ekstrak kurma ajwa dan deglet noor.

1. **Rendemen ekstrak kurma ajwa.**

   Berat beker gelas = 300 gram
   Sampel = 500 gram
   Berat sisa = 303 gram
   Berat ekstrak kental = 243 gram

   - % rendemen = $\frac{hasil\ ekstrak\ yang\ didapatkan}{berat\ \ kurma\ ajwa}$ x 100%

     = $\frac{243\ gram}{500\ gram}$ x 100%

     = 48,6%

2. **Rendemen ekstrak kurma deglet noor.**

   Berat beker gelas = 300 gram
   Sampel = 500 gram
   Berat sisa = 303 gram
   Berat ekstrak kental =160 gram

   - % rendemen = $\frac{hasil\ ekstrak\ yang\ didapatkan}{berat\ \ kurma\ ajwa}$ x 100%

     = $\frac{160\ gram}{500\ gram}$ x 100%

     = 32%

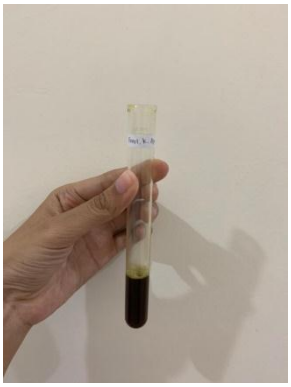
Lampiran 3. Hasil identifikasi kandungan kimia esktrak kurma ajwa dan deglet noor.

1. Uji tabung

a. uji falvonid kurma ajwa

b. uji falavonoid kurma deglet noor

c. uji fenol kurma ajwa



d. uji fenol kurma deglet noor

Lampiran 4. Perhitungan DPPH dan perhitungan larutan pengenceran.

1. Perhitungan DPPH 0,4mM

Molaritas Dpph = 4 x 10^{-4}

Mr Dpph = 394,32 gram/mol

Volume pembuatan = 100 mL

Molaritas = $\frac{berat\ Dpph}{Mr}$ x $\frac{1000}{volume\ pembuatan}$

4 x 10^{-4}= $\frac{gr}{394,32}$ x $\frac{1000}{100}$

Gram = $\frac{0,0004\ x\ 394,329/mol}{10}$

Gram = 0,01577 gram

Gram = 15,77 mg (Dpph yang dipakai)

2. Perhitungan larutan pengenceran

Konsentrasi yang digunakan 100 ppm diencerakan menjadi= 10 ppm, 8 ppm, 6 ppm, 4 ppm, 2 ppm.

- 10 ppm
  (V1 X N1) = (V2 X N2)
  X x 100 = 10 mL x 10 ppm
  X = $\frac{600}{100}$
  X = 1 mL
- 8 ppm
  (V1 X N1) = (V2 X N2)
  X x 100 = 10 mL x 8 ppm
  X = $\frac{80}{100}$
  X = 0,8 mL
- 6 ppm
  (V1 X N1) = (V2 X N2)
  X x 100 = 10 mL x 6 ppm
  X = $\frac{60}{100}$
  X = 0,6 mL
- 4 ppm
  (V1 X N1) = (V2 X N2)
  X x 100 = 10 mL x 4 ppm
  X = $\frac{40}{100}$
  X = 0,4 mL
- 2 ppm
  (V1 X N1) = (V2 X N2)

X x 100 = 10 mL x 2 ppm

$X = \frac{20}{100}$

X = 0,2 mL

Lampiran 5. Proses pengujian antioksidan

1. Proses pengujian antioksidan

a. larutan stok ekstrak kurma ajwa.

b. larutan stok ekstrak kurma deglet noor.

c. Pengeceran esktrak kurma ajwa

d. Pengeceeran ekstrak kurma deglet noor

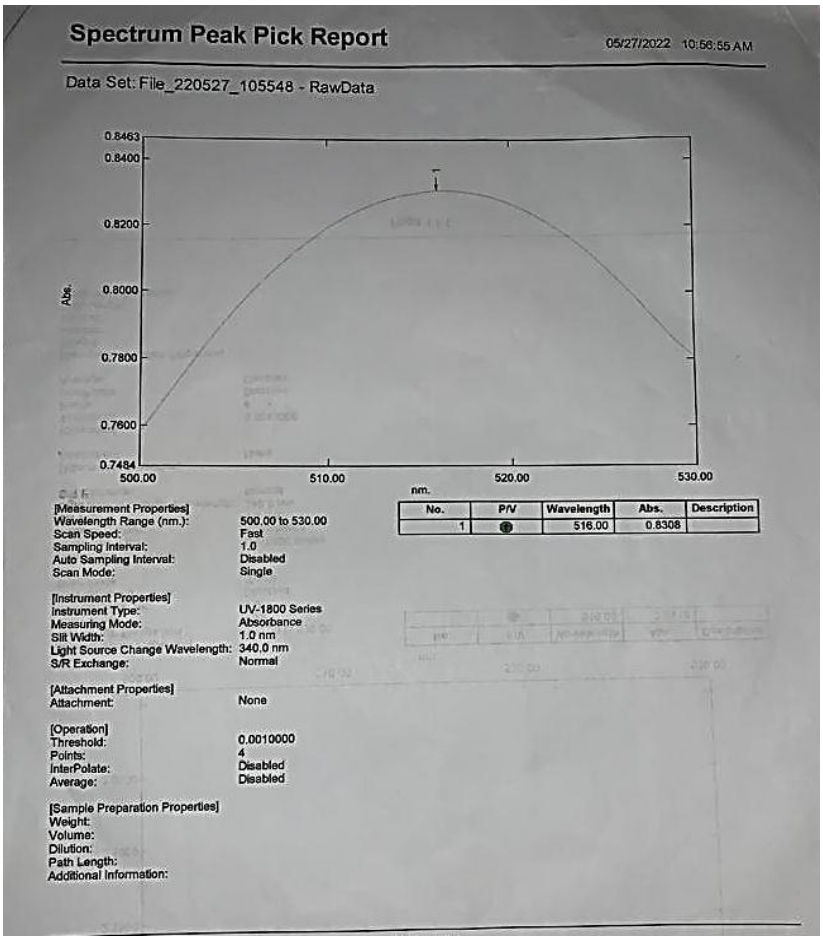
e. Larutan stok DPPH

f. perubahan warna DPPH setelah ditambah ekstrak etanol kurma ajwa.

g. perubahan warna DPPH setelah ditambahkan ekstrak etanol kurma deglet noor.

Lampiran 6. Penentuan panjang gelombang maksimum

1. Panjang gelombang maksimum DPPH



Spectrum Peak Pick Report

05/27/2022 10:56:55 AM

Data Set: File_220527_105548 - RawData

No.	P/V	Wavelength	Abs.	Description
1	P	516.00	0.8308	

[Measurement Properties]
Wavelength Range (nm.): 500.00 to 530.00
Scan Speed: Fast
Sampling Interval: 1.0
Auto Sampling Interval: Disabled
Scan Mode: Single

[Instrument Properties]
Instrument Type: UV-1800 Series
Measuring Mode: Absorbance
Slit Width: 1.0 nm
Light Source Change Wavelength: 340.0 nm
S/R Exchange: Normal

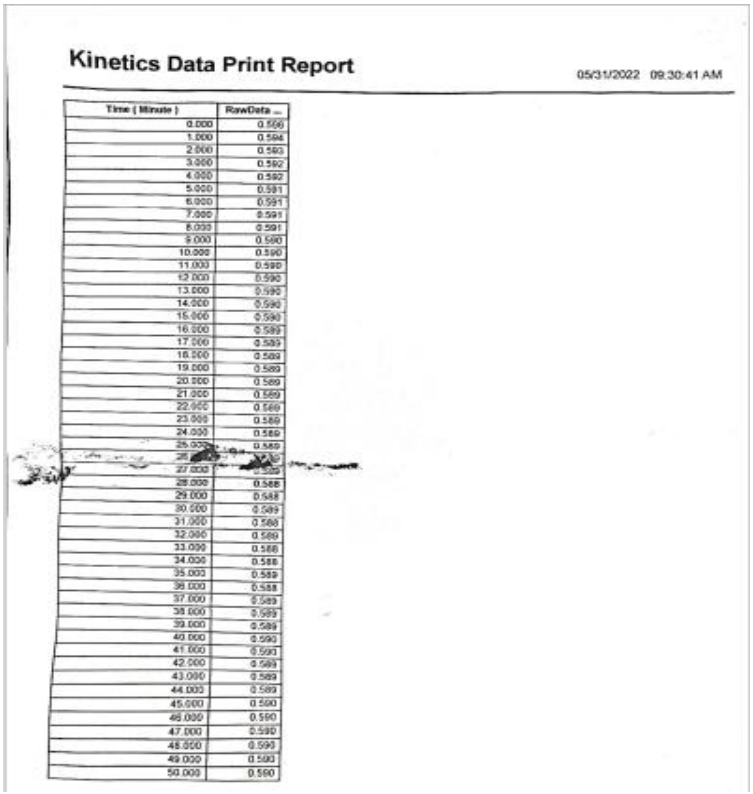
[Attachment Properties]
Attachment: None

[Operation]
Threshold: 0.0010000
Points: 4
InterPolate: Disabled
Average: Disabled

[Sample Preparation Properties]
Weight:
Volume:
Dilution:
Path Length:
Additional Information:

Lampiran 7. Penentuan *operating time*

1. *Operating time* ekstrak etanol kurma ajwa



Kinetics Data Print Report

05/31/2022 09:30:41 AM

Time (Minute)	RawData ...
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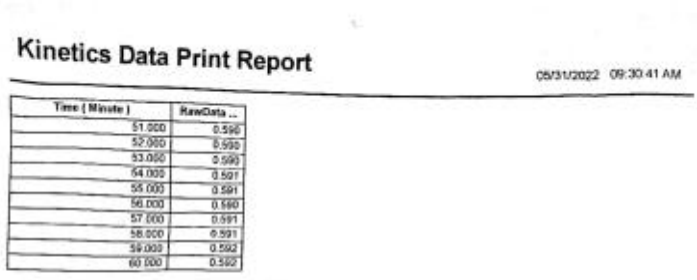
1.000	0.594
2.000	0.593
3.000	0.592
4.000	0.592
5.000	0.591
6.000	0.591
7.000	0.591
8.000	0.591
9.000	0.590
10.000	0.590
11.000	0.590
12.000	0.590
13.000	0.590
14.000	0.590
15.000	0.590
16.000	0.589
17.000	0.589
18.000	0.589
19.000	0.589
20.000	0.589
21.000	0.589
22.000	0.589
23.000	0.589
24.000	0.589
25.000	0.589
26.000	[illegible]
27.000	[illegible]
28.000	0.588
29.000	0.588
30.000	0.589
31.000	0.588
32.000	0.589
33.000	0.588
34.000	0.588
35.000	0.589
36.000	0.588
37.000	0.589
38.000	0.589
39.000	0.589
40.000	0.590
41.000	0.590
42.000	0.589
43.000	0.589
44.000	0.589
45.000	0.590
46.000	0.590
47.000	0.590
48.000	0.590
49.000	0.590
50.000	0.590



Kinetics Data Print Report

05/31/2022 09:30:41 AM

Time (Minute)	RawData ...
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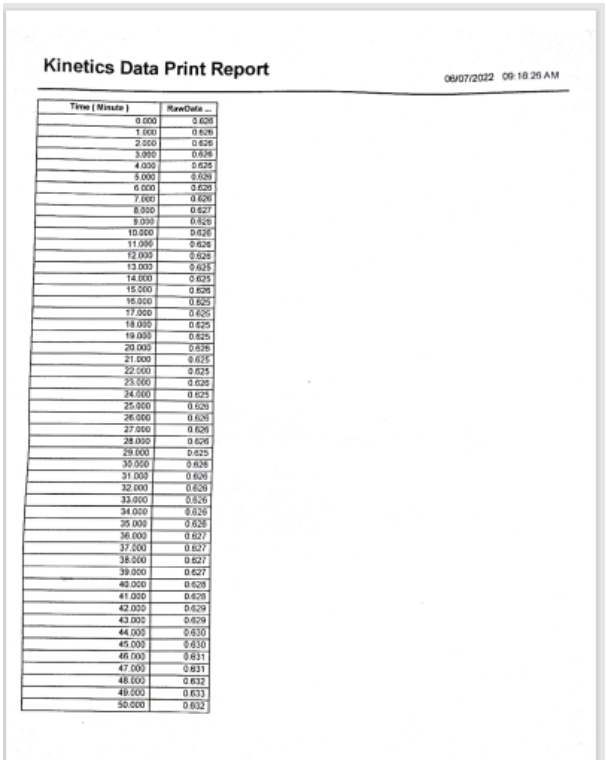
52.000	0.590
53.000	0.590
54.000	0.591
55.000	0.591
56.000	0.590
57.000	0.591
58.000	0.591
59.000	0.592
60.000	0.592

2. *Operating time* ekstrak kurma deglet noor



Kinetics Data Print Report

06/07/2022 09:18:26 AM

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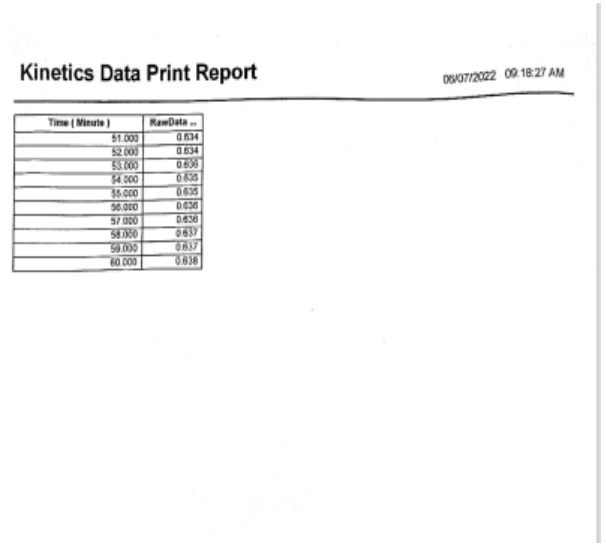
3.000	0.626
4.000	0.626
5.000	0.626
6.000	0.626
7.000	0.626
8.000	0.627
9.000	0.626
10.000	0.626
11.000	0.626
12.000	0.626
13.000	0.625
14.000	0.625
15.000	0.626
16.000	0.625
17.000	0.626
18.000	0.625
19.000	0.625
20.000	0.626
21.000	0.625
22.000	0.625
23.000	0.626
24.000	0.625
25.000	0.626
26.000	0.626
27.000	0.626
28.000	0.626
29.000	0.625
30.000	0.626
31.000	0.626
32.000	0.626
33.000	0.626
34.000	0.626
35.000	0.626
36.000	0.627
37.000	0.627
38.000	0.627
39.000	0.627
40.000	0.628
41.000	0.628
42.000	0.629
43.000	0.629
44.000	0.630
45.000	0.630
46.000	0.631
47.000	0.631
48.000	0.632
49.000	0.633
50.000	0.632



Kinetics Data Print Report

06/07/2022 09:18:27 AM

Time (Minute)	RawData ...
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52.000	0.634
53.000	0.636
54.000	0.635
55.000	0.635
56.000	0.636
57.000	0.636
58.000	0.637
59.000	0.637
60.000	0.638

Lampiran 8. Perhitungan aktivitas antioksidan dan IC_{50}

1. Perhitungan aktivitas antioksidan kurma ajwa

Aktivitas antioksidan			
Konsentrasi	Replikasi	Absorbansi kontrol	Absorbansi sampel
10	Replikasi 1	0,721	0,671
8			0,664
6			0,621
4			0,618
2			0,589
10	Replikasi 2		0,679
8			0,666
6			0,625
4			0,620
2			0,585
10	Replikasi 3		0,675
8			0,663
6			0,623
4			0,615
2			0,586

Inhibisi % = $\frac{absorbansi\ balnko - absorbansi\ sampel}{absorbansi\ \ balnko}$ **x 100%**

- Replikasi 1

  10 ppm = $\frac{0,721-0,671}{0,721}$ x 100%= 6,935%

  8 ppm = $\frac{0,721-0,664}{0,721}$ x 100%= 7,906%

  6 ppm = $\frac{0,721-0,621}{0,721}$ x 100%= 13,870%

  4 ppm = $\frac{0,721-0,618}{0,721}$ x 100%= 14,286%

  2 ppm = $\frac{0,721-0,589}{0,721}$ x 100%= 18,308%

- Replikasi 2

  10 ppm = $\frac{0,721-0,679}{0,721}$ x 100%= 5,825%

  8 ppm = $\frac{0,721-0,666}{0,721}$ x 100%= 7,628%

  6 ppm = $\frac{0,721-0,625}{0,721}$ x 100%= 13,315%

  4 ppm = $\frac{0,721-0,620}{0,721}$ x 100%= 14,008%

2 ppm = $\frac{0,721-0,585}{0,721}$ x 100%= 18,863%

- Replikasi 3

  10 ppm = $\frac{0,721-0,675}{0,721}$ x 100%= 6,380%

  8 ppm = $\frac{0,721-0,663}{0,721}$ x 100%= 8,044%

  6 ppm = $\frac{0,721-0,623}{0,721}$ x 100%= 13,592%

  4 ppm = $\frac{0,721-0,615}{0,721}$ x 100%= 14,702%

  2 ppm = $\frac{0,721-0,586}{0,721}$ x 100%= 18,724%

IC_{50}= $\frac{50-a}{b}$

Y= bx + a

- Replikasi 1

  Y= 1,456x + 3,523

  50= 1,456x + 3,523

  $\frac{\mathbf{50-3,523}}{\mathbf{1,456}}$ = x

  31,914= x

  IC_{50}= 31,914

- Replikasi 2

  Y= 1,623x + 2,191

  50= 1,623x + 2,191

  $\frac{\mathbf{50-2,191}}{\mathbf{1,623}}$ = x

  29,462= x

  IC_{50}= 29,462

- Replikasi 3

  Y= 1,567x + 2,885

  50= 1,567x + 2,885

  $\frac{\mathbf{50-2,885}}{\mathbf{1,567}}$ = x

  30,067= x

  IC_{50}= 30,067

- **Rata-rata IC_{50} yang didapatkan= $\frac{\mathbf{31,914+29,462+30,067}}{\mathbf{3}}$**

  = 30,433 ppm.

2. Hasil perhitungan regresi linier antara konsentrasi dan %inhibisi pada ekstrak kurma ajwa

Konsentrasi	Replikasi	% inhibisi	Regresilinier	IC_{50}	Rata-rata
10	Replikasi 1	6,935	a =3,523 b =1,456 r =0,968	31,914	30,433 ppm
8		7,906			
6		13,870			
4		14,286			
2		18,308			
10	Replikasi 2	5,825	a =2,191 b =1,623 r =0,978	29,462	
8		7,628			
6		13,315			
4		14,008			
2		18,863			
10	Replikasi 3	6,380	a =2,885 b =1,567 r =0,982	30,062	
8		8,044			
6		13,592			
4		14,702			
2		18,724			

3. Perhitungan aktivitas antioksidan kurma deglet noor

Aktivitas antioksidan			
Konsentrasi	Replikasi	Absorbansi kontrol	Absorbansi sampel
10	Replikasi 1	0,778	0,745
8			0,715
6			0,705
4			0,696
2			0,682
10	Replikasi 2		0,742
8			0,711
6			0,696
4			0,694
2			0,679
10	Replikasi 3		0,744
8			0,701
6			0,698
4			0,692
2			0,681

Inhibisi % = $\frac{absorbansi\ balnko - absorbansi\ sampel}{absorbansi\ \ balnko}$ **x 100%**

- Replikasi 1

  10 ppm = $\frac{0,778-0,742}{0,778}$ x 100%= 4,627%

  8 ppm = $\frac{0,778-0,711}{0,778}$ x 100%= 8,612%

  6 ppm = $\frac{0,778-0,696}{0,778}$ x 100%= 10,540%

  4 ppm = $\frac{0,778-0,694}{0,778}$ x 100%= 10,797%

  2 ppm = $\frac{0,778-0,679}{0,778}$ x 100%= 12,725%

- Replikasi 2

  10 ppm = $\frac{0,778-0,745}{0,778}$ x 100%= 4,242%

  8 ppm = $\frac{0,778-0,715}{0,778}$ x 100%= 8,098%

  6 ppm = $\frac{0,778-0,705}{0,778}$ x 100%= 9,383%

  4 ppm = $\frac{0,778-0,696}{0,778}$ x 100%= 10,540%

  2 ppm = $\frac{0,778-0,682}{0,778}$ x 100%= 12,339%

- Replikasi 3

  10 ppm = $\frac{0,778-0,744}{0,778}$ x 100%= 4,370%

  8 ppm = $\frac{0,778-0,701}{0,778}$ x 100%= 9,897%

  6 ppm = $\frac{0,778-0,698}{0,778}$ x 100%= 10,283%

  4 ppm = $\frac{0,778-0,692}{0,778}$ x 100%= 11,054%

  2 ppm = $\frac{0,778-0,681}{0,778}$ x 100%= 12,468%

IC_{50}= $\frac{50-a}{b}$

Y= bx + a

- Replikasi 1

  Y= 0,919x + 3,946

  50= 0,919x + 3,946

  $\frac{50-0,919}{3,946}$ = x

  50,112= x

  IC_{50}= 50,112 ppm

- Replikasi 2

  Y= 0,932x + 3,329

50= 0,932x + 3,329

$\frac{\mathbf{50-3,329}}{\mathbf{0,932}}$ = x

50,083= x

IC_{50}= 50,083 ppm

- Replikasi 3

Y= 0,868x + 4,409

50= 0,868x + 4,409

$\frac{\mathbf{50-4,409}}{\mathbf{0,868}}$ = x

52,548= x

IC_{50}= 52,548 ppm

- **Rata-rata IC_{50} yang didapatkan=** $\frac{\mathbf{50,112+50,083+52,548}}{\mathbf{3}}$

= 50,879 ppm

4. Hasil perhitungan regresi linier antara konsentrasi dan %inhibisi ekstrak kurma deglet noor.

Konsentrasi	Replikasi	% inhibisi	Regresilinier	IC_{50}	Rata-rata
10	Replikasi 1	4,627	a =3,946 b =0,919 r =0,947	50,112	50,879
8		8,612			
6		10,540			
4		10,797			
2		12,725			
10	Replikasi 2	4,242	a =3,329 b =0,932 r =0,968	50,083	
8		8,098			
6		9,383			
4		10,540			
2		12,339			
10	Replikasi 3	4,370	a =4,409 b =0,868 r =0,887	52,548	
8		9,897			
6		10,283			
4		11,054			
2		12,468			

Lampiran 9. Perbandingan IC_{50} menggunakan SPSS uji *t test*

1. Hasil uji normalitas dan homogenitas

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
IC50	.295	3	.	.920	3	.452
IC50	.220	3	.	.986	3	.777

a. Lilliefors Significance Correction

Oneway

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
IC50	Based on Mean	.038	1	4	.856
	Based on Median	.000	1	4	.994
	Based on Median and with adjusted df	.000	1	3.794	.994
	Based on trimmed mean	.032	1	4	.866

ANOVA

C50

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	646.986	1	646.986	412.413	.000
Within Groups	6.275	4	1.569		
Total	653.261	5			

2. Hasil uji *t test*

T-Test

[DataSet0]

Group Statistics

	Sampel	N	Mean	Std. Deviation	Std. Error Mean
Hasil Nilai IC50	Kurma ajwa	3	30.4793	1.27816	.73795
	Kurma Deglet nor	3	50.9117	1.41025	.81421

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Hasil Nilai IC50	Equal variances assumed	.104	.764	-18.594	4	.000	-20.43233	1.09887	-23.48327	-17.38139
	Equal variances not assumed			-18.594	3.962	.000	-20.43233	1.09887	-23.49487	-17.36980

Lampiran 10. Jadwal Kegiatan Penelitian

No	Jenis kegiatan	Tahun 2021		Tahun 2022						
		Nov	Des	Jan	Feb	Mar	Apr	Mei	jun	jul
1	Studi pustaka									
2	Persiapan penelitian									
	A. Pengumpulan bahan									
	B. Pembuatan ekstrak									
3	Penelitian laboratorium									
	A. Identifikasi kandungan antioksidan									
4	Pengumpulan data dan analisis data									
5	Penyusunan skripsi									