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## Lampiran 1. Surat keterangan identifikasi tanaman parijoto



### UPT-LABORATORIUM

Nomor : 154/DET/UPT-LAB/5.03.2021  
 Hal : Hasil determinasi tumbuhan  
 Lamp. : -

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 Alamat : Program Studi S1 Farmasi, Universitas Setia Budi, Surakarta  
 Nama sampel : Parijoto (*Medinilla speciosa*, Reinw. (Ex. Bl) Bl)  
 (*Medinilla magnifica* Lindl)

### HASIL DETERMINASI TUMBUHAN

#### *Klasifikasi :*

Kingdom : Plantae  
 Divisi : Magnoliophyta/Angiospermae  
 Kelas : Magnoliopsida/Dicotyledoneae  
 Bangsa : Myrtales  
 Suku : Melastomaceae  
 Marga : *Medinilla*  
 Species : *Medinilla speciosa* Reinw. (Ex. Bl) Bl  
*Medinilla magnifica* Lindl

Hasil Determinasi menurut C.A. Backer & R.C. Bakhuizen van den Brink Jr. (1963) :  
 1b - 2b - 3b - 4b - 12b - 13b - 14b - 17b - 18b - 19b - 20b - 21b - 22b - 23b - 24a - 25b - 26b -  
 27a - 28b - 29b - 30b - 31a - 32a - 33a - 34a - 35a - 36b. Familia Melastomaceae. 1b - 4b - 6b  
 - 9b - 10b - 14b - 15a - 16a - 17b - 18b - 20b - 23a. 17. Genus *Medinilla* 1b - 3a - 4a.  
*Medinilla speciosa* Reinw. (Ex. Bl) Bl.

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## Deskripsi:

- Habitus : Semak berkayu, tinggi 1-2 m.
- Akar : Sistem akar tunggang.
- Batang : Batang persegi, bersayap.
- Daun : Daun tunggal, bersilang berhadapan, tangkai pendek, bulat, lunak, warna ungu kemerahan, helaian daun lonjong, ujung runcing, tepi rata, Panjang 10-20 cm, lebar 5-15 cm, pertulangan melengkung, permukaan atas licin, warna hijau, permukaan bawah kasar, warna hijau kelabu.
- Bunga : Bunga majemuk, letak di ketiak daun, bunga sempurna berkelamin ganda, kelopak 5, ujung kelopak runcing, pangkal berlekatan, panjang 3-8 mm, warna ungu tua, benang sari 2 kali jumlah mahkota, kepala sari bentuk kuncup membengkok, warna merah keunguan, kepala putik duduk di atas bakal buah, kepala putik bulat, warna ungu, mahkota lepas, 5 helai, bentuk kuku, panjang 5-8 mm, warna merah muda.
- Buah : Buah buni, bagian ujung benjol bekas pelekatan kelopak, diameter 5-8 mm, warna merah keunguan, biji bulat, jumlah banyak, kecil, warna putih.

Kepala UPT-LAB  
Universitas Setia Budi



Asik Gunawan, Amdk

Surakarta, 5 Maret 2021  
Penanggung jawab  
Determinasi Tumbuhan

Dra. Dewi Sulistyawati, M.Sc.

**Lampiran 2. Foto bahan dan alat pembuatan ekstrak**

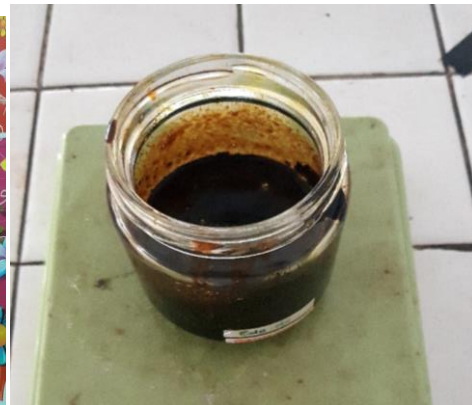
Buah parijoto



Rotary evaporator



Pengeringan buah parijoto



Ekstrak kental buah parijoto



Botol maserasi

**Lampiran 3. Hasil karakterisasi bahan alam**



Kadar air sterling bidwell



Kadar air sterling bidwell



Kadar air sterling bidwell





Kadar air gravimetri



Kadar air gravimetri



Kadar air gravimetri

**Lampiran4. Hasil identifikasi kandungan kimia**

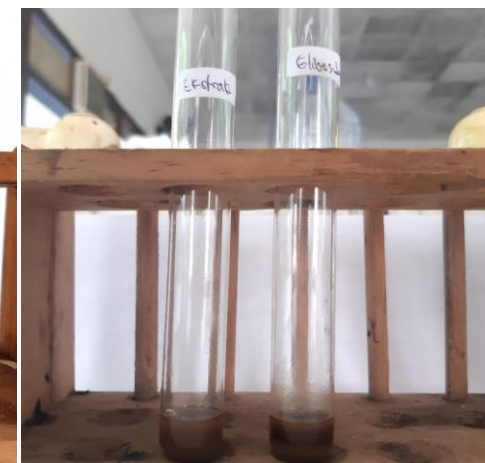
Uji saponin



Uji flavonoid

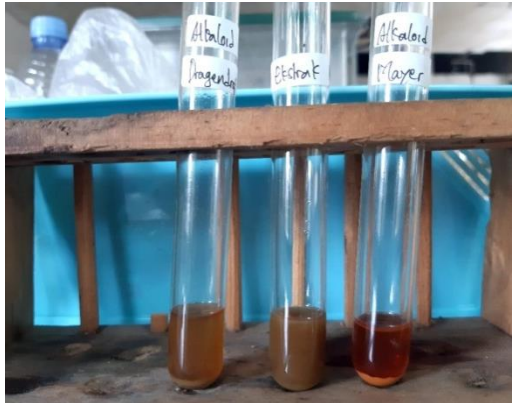


Uji terpenoid



Uji glikosida





Uji alkaloid



Uji tanin



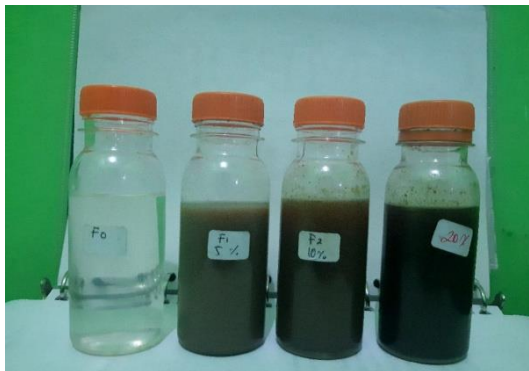
Uji bebas alkohol

**Lampiran 5. Pemeriksaan mutu fisik sediaan**

pH meter



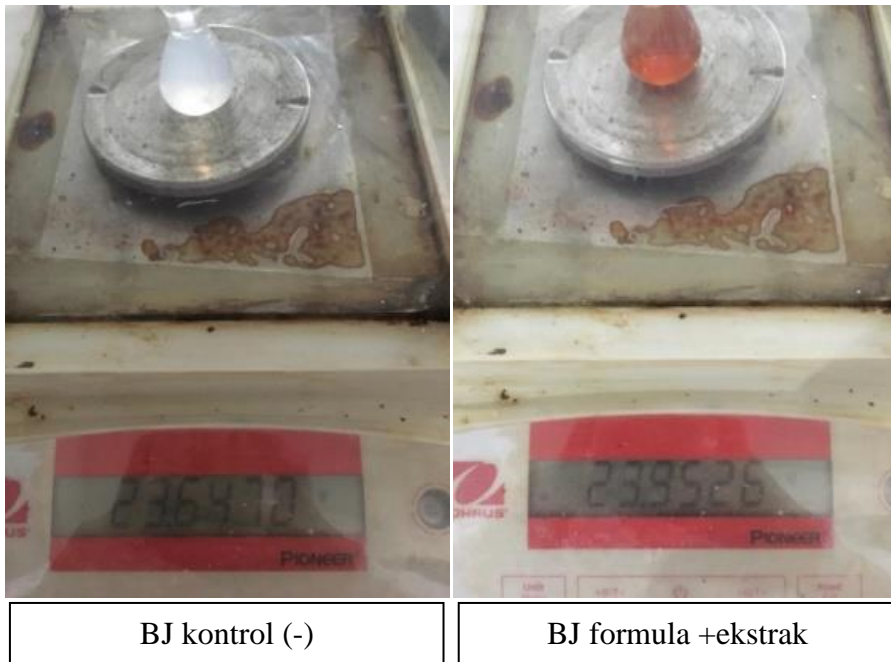
Viskometer ostwald

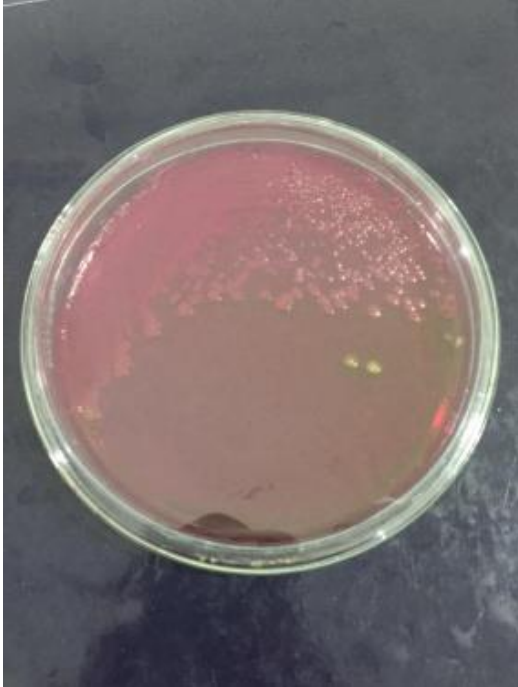


Sediaan Kumur Ekstrak Buah



Uji stabilitas

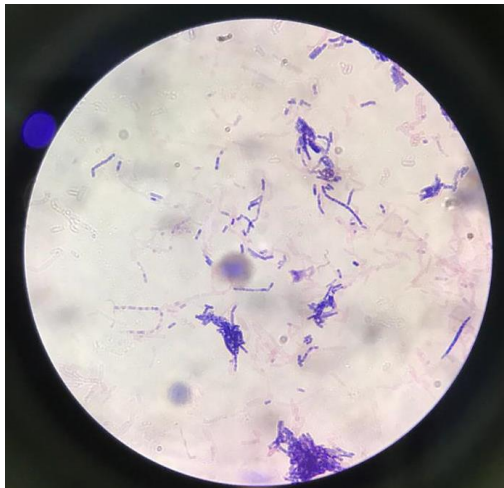


**Lampiran 6. Identifikasi bakteri**

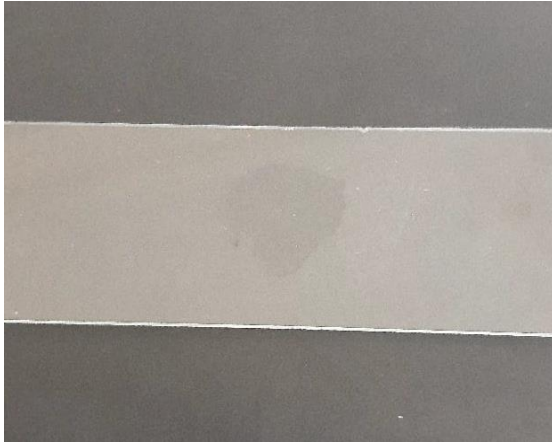
Uji Agar darah



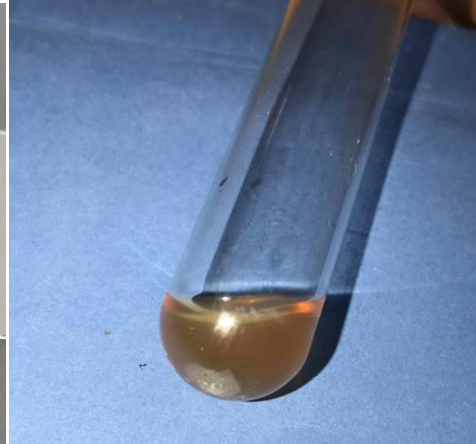
Uji Agar darah



Pewarnaan gram (Perbesaran 100x)

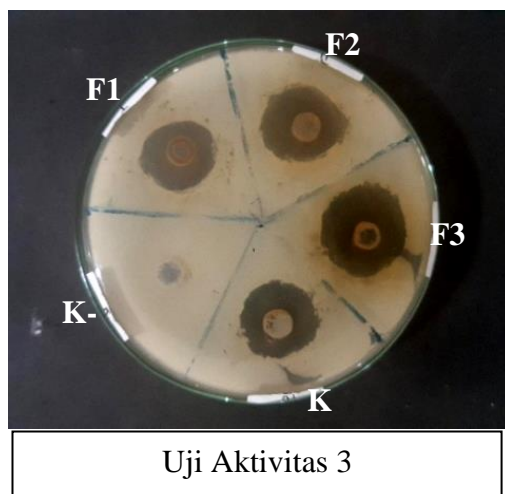
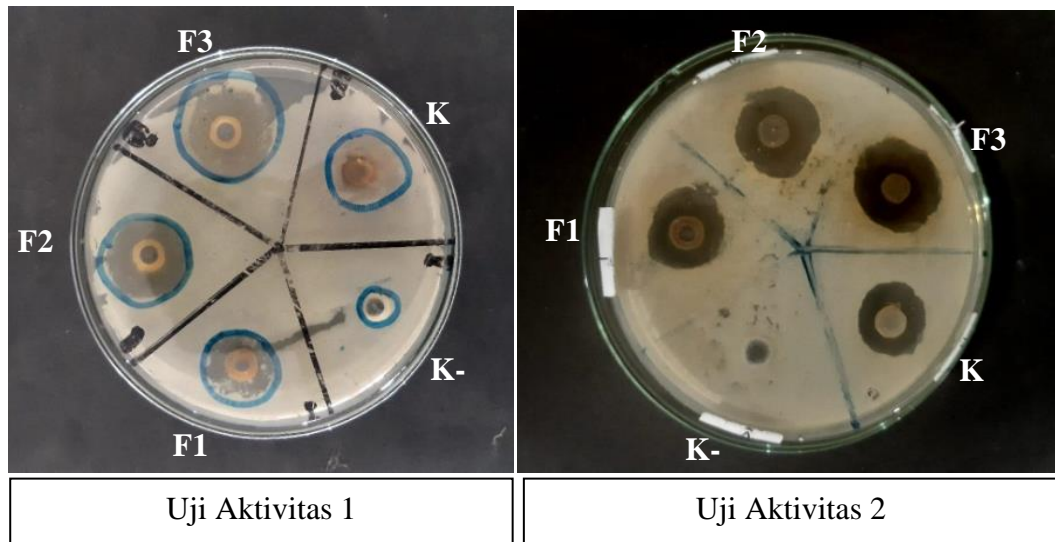


Uji katalase



Uji koagulase



**Lampiran 7. Uji aktivitas bakteri**



### Lampiran 8. Perhitungan rendemen

**Perhitungan rendemen berat basah terhadap berat kering :**

Berat basah (g)	Berat simplisia kering (g)	Rendemen (%) (b/b)
6000	720	12%

$$\begin{aligned}
 \text{Rendemen} &= \frac{\text{berat basah}}{\text{berat simplisia kering}} \times 100\% \\
 &= \frac{6000 \text{ g}}{720 \text{ g}} \times 100\% \\
 &= 12 \%
 \end{aligned}$$

**Perhitungan rendemen ekstrak :**

Bobot serbuk (g)	Bobot ekstrak (g)	Rendemen (%) (b/b)
500	54,52	10,90

$$\begin{aligned}
 \text{Rendemen} &= \frac{\text{berat ekstrak}}{\text{berat serbuk}} \times 100\% \\
 &= \frac{54,52 \text{ g}}{500 \text{ g}} \times 100\% \\
 &= 10,90 \%
 \end{aligned}$$

### Lampiran 9. Perhitungan kadar air serbuk dan ekstrak

No.	Bobot awal ekstrak (g)	Volume air (ml)	Kadar air (%)
1	20	1,5	7,5
2	20	1,4	7
3	20	1,5	7,5
<b>Rata-rata ± SD</b>			<b>7,33 ± 0,28</b>

#### Perhitungan kadar air serbuk

Replikasi 1

$$\begin{aligned} \text{Kadar air} &= \frac{\text{volume air}}{\text{berat serbuk}} \times 100\% \\ &= \frac{1,5 \text{ ml}}{20 \text{ g}} \times 100\% \\ &= 7,5 \% \end{aligned}$$

Replikasi 2

$$\begin{aligned} \text{Kadar air} &= \frac{\text{volume air}}{\text{berat serbuk}} \times 100\% \\ &= \frac{1,4 \text{ ml}}{20 \text{ g}} \times 100\% \\ &= 7 \% \end{aligned}$$

Replikasi 3

$$\begin{aligned} \text{Kadar air} &= \frac{\text{volume air}}{\text{berat serbuk}} \times 100\% \\ &= \frac{1,5 \text{ ml}}{20 \text{ g}} \times 100\% \\ &= 7,5 \% \end{aligned}$$

**Perhitungan kadar air ekstrak**

No.	% Kadar Air
1	8,88
2	9,18
3	9,05
<b>Rata-rata ±SD</b>	9,03 ± 0,15

Replikasi 1

$$\text{Kadar air} = \frac{w_1 - w_2}{w_1} \times 100\%$$

$$= \frac{10,078 - 9,183}{10,078} \times 100\%$$

$$= 8,88\%$$

Replikasi 2

$$\text{Kadar air} = \frac{w_1 - w_2}{w_1} \times 100\%$$

$$= \frac{10,056 - 9,132}{10,056} \times 100\%$$

$$= 9,188\%$$

Replikasi 3

$$\text{Kadar air} = \frac{w_1 - w_2}{w_1} \times 100\%$$

$$= \frac{10,060 - 9,149}{10,060} \times 100\%$$

$$= 9,055\%$$

### Lampiran 10. Perhitungan viskositas

Hasil uji viskositas					
Replikasi	F0	F1	F2	F3	K+
1	1.40'	1.55'	1.60'	1.74'	1.36'
2	1.35'	1.63'	1.65'	1.73'	1.35
3	1.40	1.63'	1.60'	1.75'	1.38'

Piknometer kosong : 13,600 g

Piknometer + Air : 23,504 g

Piknometer + F0 : 23,647 g

Piknometer + F1 : 23,715 g

Piknometer + F2 : 23,952 g

Piknometer + F3 : 24,084 g

Piknometer + K(+) : 23,897 g

#### Air

BJ : Piknometer + air : 23,504 g

Piknometer kosong : 13,600 g

: 23,504 - 13,600

Berat Air : 9,904 g

#### Perhitungan viskositas F0 (Kontrol Negatif)

Piknometer + F0 : 23,647 g

F0 : 10,047 g

BJ F0 : 10,047/9,904 : 1,01

Replikasi 1

$$\frac{n1}{n2} = \frac{t1 \cdot \rho1}{t2 \cdot \rho2}$$

$$\frac{n1}{0,899} = \frac{1,40 \cdot 1,01}{1,39 \cdot 1}$$

$$1,39.n1 = 1,271$$

$$n1 = 1,271/1,39$$

$$n1 = 0,91 \text{ cp}$$

Replikasi 2

$$\frac{n1}{n2} = \frac{t1.\rho1}{t2.\rho2}$$

$$\frac{n1}{0,899} = \frac{1,35.1,01}{1,39.1}$$

$$1,39.n1 = 1,225$$

$$n1 = 1,225/1,39$$

$$n1 = 0,88 \text{ cp}$$

Replikasi 3

$$\frac{n1}{n2} = \frac{t1.\rho1}{t2.\rho2}$$

$$\frac{n1}{0,899} = \frac{1,4.1,01}{1,39.1}$$

$$1,39.n1 = 1,271$$

$$n1 = 1,271/1,39$$

$$n1 = 0,91 \text{ cp}$$

### Perhitungan viskositas F1

Piknometer + F1 : 23,715 g

F1 : 10,115 g

BJ F1 : 10,115/9,904 : 1,02

Replikasi 1

$$\frac{n1}{n2} = \frac{t1.\rho1}{t2.\rho2}$$

$$\frac{n1}{0,899} = \frac{1,55.1,02}{1,39.1}$$

$$1,39.n1 = 1,421$$

$$n1 = 1,421/1,39$$

$$n1 = 1,023 \text{ cp}$$

Replikasi 2

$$\frac{n1}{n2} = \frac{t1.\rho1}{t2.\rho2}$$

$$\frac{n1}{0,899} = \frac{1,63.1,02}{1,39.1}$$

$$1,39.n1 = 1,507$$

$$n1 = 1,496/1,39$$

$$n1 = 1,076 \text{ cp}$$

Replikasi 3

$$\frac{n1}{n2} = \frac{t1.\rho1}{t2.\rho2}$$

$$\frac{n1}{0,899} = \frac{1,63.1,02}{1,39.1}$$

$$1,39.n1 = 1,507$$

$$n1 = 1,496/1,39$$

$$n1 = 1,076 \text{ cp}$$

### Perhitungan viskositas F2

Piknometer + F2 : 23,952 g

F2 : 10,352 g

BJ F2 : 10,352/9,904 : 1,04

Replikasi 1

$$\frac{n1}{n2} = \frac{t1.\rho1}{t2.\rho2}$$

$$\frac{n1}{0,899} = \frac{1,60.1,04}{1,39.1}$$

$$1,39.n1 = 1,495$$



$$n1 = 1,495/1,39$$

$$n1 = 1,07 \text{ cp}$$

Replikasi 2

$$\frac{n1}{n2} = \frac{t1 \cdot \rho1}{t2 \cdot \rho2}$$

$$\frac{n1}{0,899} = \frac{1,65 \cdot 1,04}{1,39 \cdot 1}$$

$$1,39 \cdot n1 = 1,542$$

$$n1 = 1,542/1,39$$

$$n1 = 1,10 \text{ cp}$$

Replikasi 3

$$\frac{n1}{n2} = \frac{t1 \cdot \rho1}{t2 \cdot \rho2}$$

$$\frac{n1}{0,899} = \frac{1,60 \cdot 1,04}{1,39 \cdot 1}$$

$$1,39 \cdot n1 = 1,495$$

$$n1 = 1,495/1,39$$

$$n1 = 1,07 \text{ cp}$$

### Perhitungan viskositas F3

Piknometer + F3 : 24,084 g

F3 : 10,484 g

BJ F3 : 10,484/9,904 : 1,058

Replikasi 1

$$\frac{n1}{n2} = \frac{t1 \cdot \rho1}{t2 \cdot \rho2}$$

$$\frac{n1}{0,899} = \frac{1,74 \cdot 1,05}{1,39 \cdot 1}$$

$$1,39 \cdot n1 = 1,642$$

$$n1 = 1,642/1,39$$

$$n1 = 1,18 \text{ cp}$$

Replikasi 2

$$\frac{n1}{n2} = \frac{t1 \cdot \rho1}{t2 \cdot \rho2}$$

$$\frac{n1}{0,899} = \frac{1,73 \cdot 1,05}{1,39 \cdot 1}$$

$$1,39 \cdot n1 = 1,633$$

$$n1 = 1,633/1,39$$

$$n1 = 1,17 \text{ cp}$$

Replikasi 3

$$\frac{n1}{n2} = \frac{t1 \cdot \rho1}{t2 \cdot \rho2}$$

$$\frac{n1}{0,899} = \frac{1,75 \cdot 1,05}{1,39 \cdot 1}$$

$$1,39 \cdot n1 = 1,651$$

$$n1 = 1,651/1,39$$

$$n1 = 1,18 \text{ cp}$$

### **Perhitungan viskositas K+**

Piknometer + K+ : 23,897 g

K+ : 10,297 g

BJ K+ : 10,297/9,904 : 1,039

Replikasi 1

$$\frac{n1}{n2} = \frac{t1 \cdot \rho1}{t2 \cdot \rho2}$$

$$\frac{n1}{0,899} = \frac{1,36 \cdot 1,03}{1,39 \cdot 1}$$

$$1,39 \cdot n1 = 1,259$$

$$n1 = 1,259/1,39$$

$$n1 = 0,905 \text{ cp}$$

Replikasi 2

$$\frac{n1}{n2} = \frac{t1.\rho1}{t2.\rho2}$$

$$\frac{n1}{0,899} = \frac{1,35.1,03}{1,39.1}$$

$$1,39.n1 = 1,250$$

$$n1 = 1,250/1,39$$

$$n1 = 0,899 \text{ cp}$$

Replikasi 3

$$\frac{n1}{n2} = \frac{t1.\rho1}{t2.\rho2}$$

$$\frac{n1}{0,899} = \frac{1,38.1,03}{1,39.1}$$

$$1,39.n1 = 1,277$$

$$n1 = 1,27/1,39$$

$$n1 = 0,918 \text{ cp}$$

**Lampiran 11. Uji statistik mutu fisik sediaan kumur dan aktivitas antibakteri**

**Tests of Normality**

	Formula	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	Df	Sig.
Viskositas	F1	.385	3	.	.750	3	.000
	F2	.385	3	.	.750	3	.000
	F3	.385	3	.	.750	3	.000
	Kontrolnegatif	.385	3	.	.750	3	.000
	kontrolpositif	.175	3	.	1.000	3	1.000
pH	F1	.385	3	.	.750	3	.000
	F2	.385	3	.	.750	3	.000
	F3	.385	3	.	.750	3	.000
	Kontrolnegatif	.219	3	.	.987	3	.780
	kontrolpositif	.385	3	.	.750	3	.000

a. Lilliefors Significance Correction

Interpretasi hasil: terdapat data yang memiliki nilai sig < 0,05 artinya data tidak terdistribusi normal, dan pengujian dilanjutkan dengan uji non parametric kruskal wallis.

### Uji kruskal wallis viskositas

#### Ranks

	Formula	N	Mean Rank
Viskositas	F1	3	9.33
	F2	3	9.67
	F3	3	14.00
	Kontrolnegatif	3	3.67
	kontrolpositif	3	3.33
	Total	15	

#### Test Statistics<sup>a,b</sup>

	Viskositas
Kruskal-Wallis	12.321
H	
df	4
Asymp. Sig.	.015

a. Kruskal Wallis Test

b. Grouping Variable:  
Formula

Interpretasi hasil: nilai sig < 0,05 artinya terdapat perbedaan yang signifikan antara nilai viskositas masing-masing kelompok formula.

**Uji kruskal wallis pH****Ranks**

	Formula	N	Mean Rank
pH	F1	3	8.00
	F2	3	5.00
	F3	3	2.00
	kontrolnegatif	3	14.00
	kontrolpositif	3	11.00
	Total	15	

**Test Statistics<sup>a,b</sup>**

	pH
Kruskal-Wallis H	13.597
Df	4
Asymp. Sig.	.009

a. Kruskal Wallis Test

b. Grouping Variable:  
Formula

Interpretasi hasil: nilai sig <0,05 artinya terdapat perbedaan yang signifikan antar masing-masing nilai pH kelompok formula.



### Statistic uji aktivitas

#### Tests of Normality

	Formula	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statisti c	df	Sig.	Statisti c	df	Sig.
diameter_zona_ha mbat	F1	.314	3	.	.892	3	.361
	F2	.255	3	.	.963	3	.630
	F3	.385	3	.	.750	3	.000
	Kontrolnegatif	.	3	.	.	3	.
	Kontrolpositif	.385	3	.	.750	3	.000

#### a. Lilliefors Significance Correction

Interpretasi hasil: terdapat data yang memiliki nilai sig <0,05 artinya data tidak terdistribusi normal, pengujian dilanjutkan dengan uji non parametric kruskal wallis

**Uji kruskal wallis****Ranks**

	Formula	N	Mean Rank
diameter_zona_hamba	F1	3	5.83
t	F2	3	11.00
	F3	3	14.00
	Kontrolnegatif	3	2.00
	kontrolpositif	3	7.17
	Total	15	

**Test Statistics<sup>a,b</sup>**

	diameter_zona_hambat
Kruskal-Wallis	13.122
H	
df	4
Asymp. Sig.	.011

a. Kruskal Wallis Test

b. Grouping Variable: Formula

Interpretasi hasil: nilai sig <0,05 artinya terdapat perbedaan yang signifikan antara rata-rata diameter zona hambat antar masing-masing kelompok formula.

**Uji post hoc tukey**  
**diameter\_zona\_hambat**

TukeyHSD<sup>a</sup>

Formula	N	Subset for alpha = 0.05			
		1	2	3	4
kontrolnegatif	3	.0000			
F1	3		18.3333		
kontrolpositif	3		19.1100		
F2	3			22.1133	
F3	3				25.8900
Sig.		1.000	.322	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Interpretasi hasil: seluruh formula memiliki aktivitas sebagai antibakteri karena berdasarkan hasil statistic seluruh formula memiliki perbedaan yang signifikan dengan control negative yang digunakan dan seluruh formula memiliki efek yang sama dengan control positif yang digunakan, dimana formula 1 menjadi formula dengan dosis efektif yang sama dengan kontrol positif dan formula 3 menjadi formula yang memiliki efek antibakteri paling tinggi.