

LAMPIRAN

Lampiran 1 Hasil Determinasi daun kemangi ungu



PEMERINTAH PROVINSI JAWA TIMUR
DINAS KESEHATAN
UPT LABORATORIUM HERBAL
MATERIA MEDICA BATU

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Nomor : 074/ 420/ 102.20-A/ 2022
Sifat : Biasa
Perihal : **Determinasi Tanaman Kemangi Ungu**

Memenuhi permohonan saudara :

Nama : WAHYU SHINTIA WARDANI
NIM : 25195765A
Fakultas : FARMASI, UNIVERSITAS SETIA BUDI

1. Perihal determinasi tanaman kemangi ungu

Kingdom : Plantae
Divisi : Angiospermae/ Magnoliophyta (Tumbuhan berbunga)
Kelas : Dicotyledonae/ Magnoliopsida (Berkeping dua)
Sub Kelas : Asteridae
Bangsa : Lamiales
Suku/ Famili : Lamiaceae/ Labiatae
Marga : Ocimum
Jenis : *Ocimum sanctum* L.
Nama Umum : Kemangi ungu, selasih ungu (Indonesia), lampes, kemangi (Jawa).
Kunci Determinasi : 1b-2b-3b-4b-6b-7b-9b-10b-11b-12b-13b -14 a-16a-239 b-243b-244b-248b- 249b-250b-266b-267b-273b-276b-278b-279b-282a: Labiatae/Lamiaceae-1a-2b-4b-6b-7b: Ocimum-8b: *O. sanctum*.

2. Morfologi : Habitus: Semak, semusim, tinggi 30-150 cm. Batang: Berkayu, pangkal tumpul, segi empat, beralur, bercabang, berbulu, hijau. Daun: Tunggal, bulat telur, ujung runcing, tepi bergerigi, pertulangan menyirip, panjang 14-16 mm, lebar 3-6 mm, tangkai panjang ± 1 cm, hijau. Bunga: Majemuk, bentuk tandan, berbulu, daun pelindung bentuk elips, bertangkai pendek, hijau, mahkota bulat telur, keunguan, kelopak berambut pendek, atau sebagian gundul. Buah: Kotak, coklat tua. Biji: Kecil, tiap buah terdiri 4 biji, hitam. Akar: tunggang, putih kotor.

3. Bagian yang digunakan : Daun.

4. Penggunaan : Penelitian.

5. Daftar Pustaka

- Van Steenis, CGGJ. 2008. *Flora: untuk Sekolah di Indonesia*. Pradnya Paramita, Jakarta.

Demikian surat keterangan determinasi ini kami buat untuk dipergunakan sebagaimana mestinya.

Batu, 14 Juni 2022

KEPAJABATAN UPT LABORATORIUM HERBAL
MATERIA MEDICA BATU
UPT LABORATORIUM HERBAL
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ACHMAD MAHRUR, SKM, M.Kes.
PEMBINA
NIP. 19680203 199203 1 004

Lampiran 2. Surat *Ethical Clearance*

KOMISI ETIK PENELITIAN KESEHATAN (KEPK)
 FAKULTAS KEDOKTERAN GIGI UNIVERSITAS JEMBER
 (THE ETHICAL COMMITTEE OF MEDICAL RESEARCH
 FACULTY OF DENTISTRY UNIVERSITY OF JEMBER)

Title of research protocol : " No.1634/UN25.8/KEPK/DL/2022
 The Potential of Purple Basil Leaf Extract (*Ocimum sanctum*) as Repellent Mosquito *Anopheles aconitus* in the form of lotion Preparations "

Document Approved : Research Protocol

Principal investigator : Wahyu Shintia Wardani

Member of research : -

Physician : Wahyu Shintia Wardani

Date of approval : September – November

Place of research : Balai besar litbang vektor dan reservoir penyakit (b2p2vrp) salatiga

The Research Ethic Committee Faculty of Dentistry University of Jember States That the above protocol meets the ethical principle outlined and therefore can be carried out.

Jember, August 30th 2022

Chairman of Research Ethics Committee
 Faculty of Dentistry University of Jember



(Prof. Dr. drg. I Dewa Ayu Ratna Dewanti, M.Si.)

Lampiran 3. Keterangan telah melakukan penelitian

**SURAT KETERANGAN**

Nomor : LB.02.06/1 /2022

Yang bertanda tangan di bawah ini :

Nama : dr. Bagus Febrianto, M.Sc
 NIP : 197002232002121001
 Pangkat / Golongan : Pembina / IV a
 Jabatan : Plt Kepala B2P2VRP

Menerangkan bahwa Mahasiswa Program Studi S1 Farmasi, Fakultas Farmasi, Universitas Setia Budi tersebut di bawah ini:

No	Nama	NIM	Judul Penelitian
1	Wahyu Shintia Wardani	25195765A	Potensi Ekstrak Daun Kemangi Ungu (<i>Ocimum sanctum</i>) Sebagai Repellent Nyamuk <i>Anopheles aconitus</i> dalam bentuk sediaan Lotion

Telah melakukan penelitian di Balai Besar Penelitian dan Pengembangan Vektor dan Reservoir Penyakit Salatiga pada tanggal 25 s.d. 26 Oktober 2022.

Demikian Surat Keterangan ini dibuat untuk digunakan seperlunya.

26 Oktober 2022

Plt. Kepala B2P2VRP



dr. Bagus Febrianto, M.Sc
 NIP. 197002232002121001

Lampiran 4. Daun kemangi ungu



Daun kemangi ungu segar



Pengeringan dengan panas matahari



Daun kemangi setelah dikeringkan



Serbuk daun kemangi ungu diayak



Maserasi serbuk daun
kemangi ungu



Remaserasi daun
kemangi ungu



Vacum Rotary Evaporator
pembuatan ekstrak



Hasil evap yang dioven

Lampiran 5. Hasil perhitungan rendemen daun kemangi ungu

Bobot Basah (g)	Bobot Kering (g)	Rendemen (%)
14000	7000	42,85

Perhitungan bobot kering terhadap bobot basah :

$$\text{Rendemen (\%)} = \frac{\text{Bobot kering}}{\text{Bobot basah}} \times 100 \%$$

$$\text{Rendemen (\%)} = \frac{7000}{14000} \times 100\% = 42,85\%$$

Perhitungan Lost On Drying (LOD) pengeringan daun kemangi ungu :

$$\text{LOD (\%)} = \frac{\text{Bobot basah} - \text{Bobot kering}}{\text{Bobot basah}} \times 100\%$$

$$\text{LOD (\%)} = \frac{14000 - 7000}{14000} \times 100\%$$

Hasil perhitungan bobot kering daun kemangi ungu terhadap bobot basah diperoleh rendemen sebesar 42,85% dan pada hasil perhitungan Lost On Drying (LOD) pengeringan daun kemangi ungu diperoleh 50%

Lampiran 6. Hasil perhitungan presentase bobot ekstrak daun kemangi ungu

Bobot Serbuk (g)	Bobot Ekstrak (g)	Rendemen (%)
1000	92	9,2%

Perhitungan bobot ekstrak terhadap serbuk :

$$\text{Rendemen (\%)} = \frac{\text{Bobot ekstrak}}{\text{Bobot serbuk}} \times 100 \%$$

$$\text{Rendemen (\%)} = \frac{1000}{92} \times 100\% = 9,2\%$$

Hasil perhitungan bobot ekstrak terhadap bobot serbuk didapatkan hasil rendemen sebesar 9,2%

Lampiran 7. Identifikasi susut pengerinan serbuk dan ekstrak daun kemangi ungu

Susut pengerinan serbuk



Susut pengerinan ekstrak

Lampiran 8. Hasil uji bebas etanol

Uji bebas etanol pada ekstrak

Lampiran 9. Identifikasi kandungan ekstrak daun kemangi ungu dengan metode uji tabung dan KLT

Uji alkaloid (Dragendorf)



Uji alkaloid (mayer)



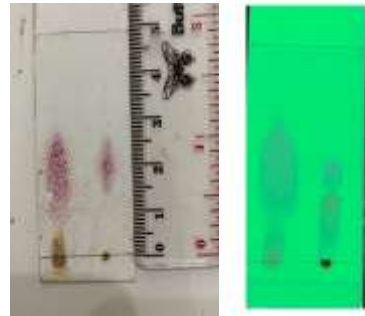
Uji flavonoid



Uji saponin



Uji polifenol



Identifikasi senyawa eugenol dengan metode KLT

Lampiran 10. Hasil pengujian sediaan *lotion*

Pengujian daya lekat



Pengujian daya sebar



Pengujian viskositas



Uji tipe emulsi M/A dengan elektroda



Uji tipe emulsi dengan sudan III



Pengujian pH



Oven Cycling test

Lampiran 11. Pengujian efektivitas *Repellent*



Penimbangan *lotion* 2gram



Pengolesan *lotion* ke probandus



Pengujian *repellent*



Probandus pengujian



Tangan probandus sebagai kontrol dan perlakuan



Tempat melakukan penelitian

Lampiran 12. Hasil uji efektivitas *Repellent*

Konsentrasi (%)	Replikasi	Jam ke-1			Jam ke-2			Jam ke-3			Jam ke-4			Jam ke-5			Jam ke-6			Rata-rata (%)	SD
		K	P	DP	K	P	DP	K	P	DP	K	P	DP	K	P	DP	K	P	DP		
2%	1	83	115	81,93	166	17	89,76	128	16	87,5	90	26	71,11	112	18	83,93	139	11	92,09	82,95	±1,55
	2	22	1	95,45	62	13	79,03	117	9	92,31	17	3	82,35	42	6	85,71	104	22	78,85		
	3	129	26	79,84	71	9	87,32	92	10	89,13	126	12	90,48	155	37	76,13	60	4	93,33		
Rata-rata DP (%)		85,74			83,34			82,44			81,31			81,92			83,12				
6%	1	92	14	48,78	149	13	91,28	86	17	80,23	141	18	87,23	117	26	77,78	106	26	75,47	87,73	±1,59
	2	43	3	93,02	81	11	86,42	38	0	100	61	14	77,04	69	15	78,26	37	0	100		
	3	217	39	90,69	90	11	87,78	166	25	86,56	72	10	86,11	64	0	100	166	28	83,13		
Rata-rata DP (%)		89,48			88,49			88,43			88,43			85,35			86,2				
10%	1	167	8	96,21	160	15	90,62	172	12	93,02	127	19	85,03	132	24	81,82	173	23	92,40	94,65	±4,21
	2	107	1	99,07	100	8	92	73	1	98,63	85	7	91	69	1	98,55	155	12	95,60		
	3	124	1	99,19	120	5	95,83	68	11	98,53	122	6	95,08	162	3	98,15	85	6	96,90		
Rata-rata DP (%)		97,82			97,82			96,73			90,37			92,84			92,30				
Kontrol negatif	1	95	29	69,47	78	34	56,40	151	23	84,77	125	48	61,6	95	25	73,68	170	38	77,6	73,18	±5,94
	2	23	5	78,26	30	5	83,30	96	42	56,25	45	9	80,0	37	2	94,59	34	15	55,88		
	3	158	21	86,71	143	17	88,11	107	0	100	201	32	84,08	158	86	45,57	204	97	52,4		
Rata-rata DP (%)		78,15			75,93			76,49			75,23			71,28			61,99				
Kontrol positif	1	105	3	97,14	85	1	98,82	107	4	96,26	75	3	96,00	116	0	100	90	4	95,55	97,27	±0,87
	2	175	2	98,85	90	3	96,66	96	2	97,91	92	1	98,91	65	4	93,84	85	2	97,64		

	3	12 5	0	100	10 0	2	98	65	2	96,92	85	4	95,2 9	90	2	97,7 7	65	3	95,38		
Rata-rata DP (%)		98,66			97,82			97,03			96,73			97,2			96,19				

Keterangan :**K : Kontrol****P : Perlakuan****DP : Daya Proteksi**

**Lampiran 13 Perhitungan daya proteksi sediaan *lotion*
Konsentrasi 2%**

Jam ke-1

$$1. \text{ Replikasi 1} = \frac{83-15}{83} \times 100\% = 81,93 \%$$

$$2. \text{ Replikasi 2} = \frac{22-1}{22} \times 100\% = 95,45 \%$$

$$3. \text{ Replikasi 3} = \frac{129-26}{129} \times 100\% = 79,84 \%$$

Jam ke-2

$$1. \text{ Replikasi 1} = \frac{166-17}{166} \times 100\% = 89,76 \%$$

$$2. \text{ Replikasi 2} = \frac{62-13}{62} \times 100\% = 79,03 \%$$

$$3. \text{ Replikasi 3} = \frac{71-9}{71} \times 100\% = 87,32 \%$$

Jam ke-3

$$1. \text{ Replikasi 1} = \frac{128-16}{128} \times 100\% = 87,5 \%$$

$$2. \text{ Replikasi 2} = \frac{117-9}{117} \times 100\% = 92,31\%$$

$$3. \text{ Replikasi 3} = \frac{92-10}{92} \times 100\% = 89,13\%$$

Jam ke-4

$$1. \text{ Replikasi 1} = \frac{90-26}{90} \times 100\% = 71,11 \%$$

$$2. \text{ Replikasi 2} = \frac{17-3}{17} \times 100\% = 82,35 \%$$

$$3. \text{ Replikasi 3} = \frac{126-12}{126} \times 100\% = 90,48 \%$$

Jam ke-5

1. Replikasi 1 = $\frac{112-18}{112} \times 100\% = 83,93 \%$
2. Replikasi 2 = $\frac{42-6}{42} \times 100\% = 85,71 \%$
3. Replikasi 3 = $\frac{155-37}{155} \times 100\% = 76,13 \%$

Jam ke-6

1. Replikasi 1 = $\frac{139-11}{139} \times 100\% = 92,09 \%$
2. Replikasi 2 = $\frac{104-22}{104} \times 100\% = 78,85 \%$
3. Replikasi 3 = $\frac{60-4}{60} \times 100\% = 93,33 \%$

Konsentrasi 6%

Jam ke-1

1. Replikasi 1 = $\frac{92-14}{92} \times 100\% = 84,78 \%$
2. Replikasi 2 = $\frac{43-3}{43} \times 100\% = 93,02 \%$
3. Replikasi 3 = $\frac{217-39}{217} \times 100\% = 90,65 \%$

Jam ke-2

1. Replikasi 1 = $\frac{149-13}{149} \times 100\% = 91,28\%$
2. Replikasi 2 = $\frac{81-11}{81} \times 100\% = 86,42 \%$
3. Replikasi 3 = $\frac{90-11}{90} \times 100\% = 87,78 \%$

Jam ke-3

1. Replikasi 1 = $\frac{86-17}{86} \times 100\% = 80,23 \%$
2. Replikasi 2 = $\frac{38-0}{38} \times 100\% = 100 \%$
3. Replikasi 3 = $\frac{166-25}{166} \times 100\% = 86,56 \%$

Jam ke-4

1. Replikasi 1 = $\frac{141-18}{141} \times 100\% = 87,23 \%$
2. Replikasi 2 = $\frac{61-4}{61} \times 100\% = 77,04 \%$
3. Replikasi 3 = $\frac{72-10}{72} \times 100\% = 86,11 \%$

Jam ke-5

1. Replikasi 1 = $\frac{117-26}{117} \times 100\% = 77,78 \%$
2. Replikasi 2 = $\frac{69-15}{69} \times 100\% = 78,26 \%$
3. Replikasi 3 = $\frac{64-0}{64} \times 100\% = 100 \%$

Jam ke-6

1. Replikasi 1 = $\frac{106-26}{106} \times 100\% = 75,47 \%$
2. Replikasi 2 = $\frac{37-0}{37} \times 100\% = 100 \%$
3. Replikasi 3 = $\frac{166-28}{166} \times 100\% = 83,13 \%$

Konsentrasi 10%

Jam ke-1

1. Replikasi 1 = $\frac{167-8}{167} \times 100\% = 96,21 \%$
2. Replikasi 2 = $\frac{107-1}{107} \times 100\% = 99,07 \%$
3. Replikasi 3 = $\frac{124-1}{124} \times 100\% = 99,19 \%$

Jam ke-2

1. Replikasi 1 = $\frac{160-15}{160} \times 100\% = 90,62 \%$
2. Replikasi 2 = $\frac{100-8}{100} \times 100\% = 92 \%$
3. Replikasi 3 = $\frac{120-5}{120} \times 100\% = 95,83 \%$

Jam ke-3

1. Replikasi 1 = $\frac{172-12}{172} \times 100\% = 93,02 \%$
2. Replikasi 2 = $\frac{73-1}{73} \times 100\% = 98,63 \%$
3. Replikasi 3 = $\frac{68-11}{68} \times 100\% = 98,53\%$

Jam ke-4

1. Replikasi 1 = $\frac{127-19}{127} \times 100\% = 85,03 \%$
2. Replikasi 2 = $\frac{85-7}{85} \times 100\% = 91 \%$
3. Replikasi 3 = $\frac{122-6}{122} \times 100\% = 95,08 \%$

Jam ke-5

1. Replikasi 1 = $\frac{132-24}{132} \times 100\% = 81,82 \%$
2. Replikasi 2 = $\frac{69-1}{69} \times 100\% = 98,55 \%$
3. Replikasi 3 = $\frac{162-3}{162} \times 100\% = 98,15 \%$

Jam ke-6

1. Replikasi 1 = $\frac{173-23}{173} \times 100\% = 92,40 \%$
2. Replikasi 2 = $\frac{155-12}{155} \times 100\% = 95,60 \%$
3. Replikasi 3 = $\frac{85-6}{85} \times 100\% = 96,90 \%$

Kontrol (-)

Jam ke-1

1. Replikasi 1 = $\frac{95-29}{95} \times 100\% = 69,47\%$

2. Replikasi 2 = $\frac{23-5}{23} \times 100\% = 78,26\%$

3. Replikasi 3 = $\frac{158-21}{158} \times 100\% = 86,71\%$

Jam ke-2

1. Replikasi 1 = $\frac{78-34}{78} \times 100\% = 56,40\%$

2. Replikasi 2 = $\frac{30-5}{30} \times 100\% = 83,30\%$

3. Replikasi 3 = $\frac{143-17}{143} \times 100\% = 88,11\%$

Jam ke-3

1. Replikasi 1 = $\frac{151-23}{151} \times 100\% = 84,77\%$

2. Replikasi 2 = $\frac{96-42}{96} \times 100\% = 56,25\%$

3. Replikasi 3 = $\frac{107-0}{107} \times 100\% = 100\%$

Jam ke-4

1. Replikasi 1 = $\frac{125-48}{125} \times 100\% = 61,6\%$

2. Replikasi 2 = $\frac{45-9}{45} \times 100\% = 80,0\%$

3. Replikasi 3 = $\frac{201-32}{201} \times 100\% = 84,08\%$

Jam ke-5

1. Replikasi 1 = $\frac{95-25}{95} \times 100\% = 73,68\%$

2. Replikasi 2 = $\frac{37-2}{37} \times 100\% = 94,59\%$

3. Replikasi 3 = $\frac{158-86}{158} \times 100\% = 45,57\%$

Jam ke-6

1. Replikasi 1 = $\frac{170-38}{170} \times 100\% = 77,6\%$
2. Replikasi 2 = $\frac{34-15}{34} \times 100\% = 55,88\%$
3. Replikasi 3 = $\frac{207-97}{204} \times 100\% = 52,4 \%$

Kontrol (+)

Jam ke-1

1. Replikasi 1 = $\frac{105-3}{105} \times 100\% = 97,14 \%$
2. Replikasi 2 = $\frac{175-2}{175} \times 100\% = 98,85 \%$
3. Replikasi 3 = $\frac{125-0}{125} \times 100\% = 100 \%$

Jam ke-2

1. Replikasi 1 = $\frac{85-1}{85} \times 100\% = 98,82 \%$
2. Replikasi 2 = $\frac{90-3}{90} \times 100\% = 96,66 \%$
3. Replikasi 3 = $\frac{100-2}{100} \times 100\% = 98 \%$

Jam ke-3

1. Replikasi 1 = $\frac{107-4}{107} \times 100\% = 96,26 \%$
2. Replikasi 2 = $\frac{96-2}{96} \times 100\% = 97,91\%$
3. Replikasi 3 = $\frac{65-2}{65} \times 100\% = 96,92 \%$

Jam ke-4

1. Replikasi 1 = $\frac{75-3}{75} \times 100\% = 96,00\%$
2. Replikasi 2 = $\frac{92-1}{92} \times 100\% = 98,91\%$
3. Replikasi 3 = $\frac{85-4}{85} \times 100\% = 95,29\%$

Jam ke-5

1. Replikasi 1 = $\frac{116-0}{116} \times 100\% = 100\%$
2. Replikasi 2 = $\frac{65-4}{65} \times 100\% = 93,84\%$
3. Replikasi 3 = $\frac{90-2}{90} \times 100\% = 97,77\%$

Jam ke-6

1. Replikasi 1 = $\frac{90-4}{90} \times 100\% = 95,55\%$
2. Replikasi 2 = $\frac{85-2}{85} \times 100\% = 97,65\%$
3. Replikasi 3 = $\frac{65-3}{65} \times 100\% = 95,38\%$

Lampiran 14 Uji statistic Saphiro Wilk, analisis two way anova uji viskositas sediaan lotion ekstrak daun kemangi ungu

Formula	Waktu	Viskositas			Rata-Rata	SD
		Replikasi 1	Replikasi 2	Replikasi 3		
Kontrol (-)	Hari 1	128	130	133	130,33	2,52
	Hari 21	130	135	132	132,33	2,52
Konsentrasi 2%	Hari 1	137	133	135	135,00	2,00
	Hari 21	135	140	137	137,33	2,52
Konsentrasi 6%	Hari 1	155	150	153	152,67	2,52
	Hari 21	158	155	159	157,33	2,08
Konsentrasi 10%	Hari 1	165	163	160	162,67	2,52
	Hari 21	175	165	170	170,00	5,00

Descriptives

		Statistic	Std. Error	
Standardized Residual for Hasil	Mean	.0000	.17025	
	95% Confidence Interval for Mean	Lower Bound	-.3522	
		Upper Bound	.3522	
	5% Trimmed Mean	.0000		
	Median	.0000		
	Variance	.696		
	Std. Deviation	.83406		
	Minimum	-1.75		
	Maximum	1.75		
	Range	3.51		
	Interquartile Range	1.61		
	Skewness	-.005	.472	
	Kurtosis	-.394	.918	

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for Hasil	.133	24	.200*	.959	24	.411

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

a. Lilliefors Significance Correction

Kesimpulan test *Saphiro Wilk* : Sig 0.411 > 0,05, maka data viskositas terdistribusi normal

Levene's Test of Equality of Error Variances^{a,b}

		Levene Statistic	df1	df2	Sig.
Hasil	Based on Mean	.480	7	16	.835
	Based on Median	.416	7	16	.878
	Based on Median and with adjusted df	.416	7	10.783	.872
	Based on trimmed mean	.477	7	16	.837

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: Hasil

b. Design: Intercept + Formula + Perlakuan + Formula * Perlakuan

Tests of Between-Subjects Effects

Dependent Variable: Hasil

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	4929.958 ^a	7	704.280	86.681	.000
Intercept	520087.042	1	520087.042	64010.713	.000
Formula	4802.458	3	1600.819	197.024	.000
Perlakuan	100.042	1	100.042	12.313	.003
Formula * Perlakuan	27.458	3	9.153	1.126	.368
Error	130.000	16	8.125		
Total	525147.000	24			
Corrected Total	5059.958	23			

a. R Squared = .974 (Adjusted R Squared = .963)

Homogeneous Subsets

Hasil

Tukey HSD^{a,b}

Formula	N	Subset		
		1	2	3
Kontrol negatif	6	141.5000		
Formula 1	6	144.8333	144.8333	
Formula 2	6		148.8333	
Formula 3	6			153.6667
Sig.		.220	.111	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 8.125.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = .05.

Lampiran 15 Uji statistik Saphiro Wilk, analisis two way anova uji pH sediaan lotion ekstrak daun kemangi ungu

Formula	Waktu	pH			Rata-rata	± SD
		Replikasi 1	Replikasi 2	Replikasi 3		
F I	Hari ke 1	6	6	6	6,00	0
	Hari ke 21	6	6	6	6,00	0
F II	Hari ke 1	7	7	7	7,00	0
	Hari ke 21	7	7	7	7,00	0
F III	Hari ke 1	7	7	7	7,00	0
	Hari ke 21	7	7	7	7,00	0
K (-)	Hari ke 1	6	6	6	6,00	0
	Hari ke 21	5	5	5	5,00	0

Descriptives

		Statistic	Std. Error	
Standardized Residual for Hasil	Mean	.0000	.17025	
	95% Confidence Interval for Mean	Lower Bound	-.3522	
		Upper Bound	.3522	
	5% Trimmed Mean	.0149		
	Median	.1910		
	Variance	.696		
	Std. Deviation	.83406		
	Minimum	-1.53		
	Maximum	1.22		
	Range	2.75		
	Interquartile Range	1.27		
	Skewness	-.311	.472	
Kurtosis	-1.013	.918		

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for Hasil	.138	24	.200 [*]	.946	24	.223

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

a. Lilliefors Significance Correction

Kesimpulan test *Saphiro Wilk* : Sig 0.223 > 0,05, maka data pH terdistribusi normal

Levene's Test of Equality of Error Variances^{a,b}

		Levene Statistic	df1	df2	Sig.
Hasil	Based on Mean	.602	7	16	.746
	Based on Median	.262	7	16	.960
	Based on Median and with adjusted df	.262	7	12.702	.958
	Based on trimmed mean	.573	7	16	.767

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: Hasil

b. Design: Intercept + Formula + Perlakuan + Formula * Perlakuan

Tests of Between-Subjects Effects

Dependent Variable: Hasil

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	13.210 ^a	7	1.887	247.910	.000
Intercept	1046.364	1	1046.364	137453.426	.000
Formula	11.928	3	3.976	522.279	.000
Perlakuan	.315	1	.315	41.393	.000
Formula * Perlakuan	.968	3	.323	42.380	.000
Error	.122	16	.008		
Total	1059.697	24			
Corrected Total	13.332	23			

a. R Squared = .991 (Adjusted R Squared = .987)

Homogeneous Subsets

Hasil

Tukey HSD^{a,b}

Formula	N	Subset		
		1	2	3
Kontrol negatif	6	5.6733		
Formula 1	6		6.1667	
Formula 3	6			7.2667
Formula 2	6			7.3050
Sig.		1.000	1.000	.871

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .008.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = .05.

Lampiran 16 Uji statistik Komolgorov Smirnov, analisis two way anova uji daya sebar sediaan lotion ekstrak daun kemangi ungu

Formula	Waktu	Beban (g)	Diameter penyebaran (cm)			Rata-rata	± SD
			Replikasi 1	Replikasi 2	Replikasi 3		
F I	Hari ke-1	0	5,9	5,6	5,9	5,80	0,17
		50	5,7	6,6	6,8	6,37	0,59
		100	7,2	6,7	6,9	6,93	0,25
		150	7,6	7,1	7,3	7,30	0,25
	Hari ke-21	0	5,5	5,2	5,4	5,37	0,15
		50	5,5	6	6,3	5,93	0,40
		100	6,9	6,6	6,6	6,70	0,17
		150	6,8	7	7	6,93	0,12
F II	Hari ke-1	0	7,7	7,3	7,2	7,40	0,26
		50	8	7,9	7,8	7,90	0,10
		100	8,2	8,2	8,1	8,17	0,06
		150	8,5	8,4	8,2	8,37	0,15
	Hari ke-21	0	7,5	7,2	7,2	7,30	0,17
		50	7,8	7,5	7	7,43	0,40
		100	7,9	8	8	7,97	0,06
		150	8,1	7,9	7,8	7,93	0,15
F III	Hari ke-1	0	7,8	7,4	7,3	7,50	0,26
		50	8,1	7,9	7,9	7,97	0,12
		100	8,3	8,3	8,2	8,27	0,06
		150	8,5	8,4	8,3	8,40	0,10
	Hari ke-21	0	7,5	7,1	7,2	7,27	0,21
		50	7,7	7,5	7,6	7,60	0,10
		100	7,8	7,5	7,3	7,53	0,25
		150	8,1	8	8,1	8,07	0,06
K (-)	Hari ke-1	0	6,5	6,2	6,6	6,4	0,21
		50	8	7,2	7,5	7,6	0,40
		100	8	7,4	8	7,8	0,35
		150	8,9	7,9	8,4	8,4	0,50
	Hari ke-21	0	6,5	6,6	6,4	6,5	0,1
		50	7,3	7,1	7,2	7,2	0,1
		100	8	8	8	8	0
		150	8,6	9	8,5	8,7	0,26

Descriptives

		Statistic	Std. Error	
Standardized Residual for Hasil	Mean	.0000	.08377	
	95% Confidence Interval for Mean	Lower Bound	-.1663	
		Upper Bound	.1663	
	5% Trimmed Mean	.0154		
	Median	.0000		
	Variance	.674		
	Std. Deviation	.82078		
	Minimum	-2.71		
	Maximum	2.03		
	Range	4.74		
	Interquartile Range	.81		
	Skewness	-.269	.246	
	Kurtosis	1.078	.488	

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for Hasil	.112	96	.004	.975	96	.066

a. Lilliefors Significance Correction

Tests of Between-Subjects Effects

Dependent Variable: Hasil

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	62.565 ^a	31	2.018	33.290	.000
Intercept	5267.325	1	5267.325	86883.713	.000
Formula	32.077	3	10.692	176.368	.000
Perlakuan	1.628	1	1.628	26.847	.000
Beban	23.353	3	7.784	128.400	.000
Formula * Perlakuan	.813	3	.271	4.469	.007
Formula * Beban	3.907	9	.434	7.160	.000
Perlakuan * Beban	.189	3	.063	1.037	.382
Formula * Perlakuan * Beban	.599	9	.067	1.098	.377
Error	3.880	64	.061		
Total	5333.770	96			
Corrected Total	66.445	95			

a. R Squared = .942 (Adjusted R Squared = .913)

Homogeneous Subsets

Hasil

Tukey HSD^{a,b}

Formula	N	Subset		
		1	2	3
Formula 1	24	6.4208		
Kontrol negatif	24		7.5750	
Formula 2	24			7.8083
Formula 3	24			7.8250
Sig.		1.000	1.000	.995

Means for groups in homogeneous subsets are displayed. Based on observed means.

The error term is Mean Square(Error) = .061.

a. Uses Harmonic Mean Sample Size = 24.000.

b. Alpha = 0.05.

Lampiran 17 Uji statistik Saphiro Wilk, analisis two way anova uji daya lekat sediaan lotion ekstrak daun kemangi ungu

Formula	Waktu	Daya Lekat (detik)			Rata-rata	± SD
		Replikasi 1	Replikasi 2	Replikasi 3		
F I	Hari ke 1	0,93	0,87	0,91	0,90	0,03
	Hari ke 21	0,99	0,91	0,98	0,96	0,04
F II	Hari ke 1	1,02	1,07	1	1,03	0,04
	Hari ke 21	1,1	1,15	1,5	1,25	0,18
F III	Hari ke 1	1,17	1,1	1,6	1,29	0,27
	Hari ke 21	1,2	1,11	1,8	1,37	0,31
K (-)	Hari ke 1	0,82	0,56	0,4	0,59	0,21
	Hari ke 21	0,92	0,56	0,45	0,64	0,20

Descriptives

		Statistic	Std. Error	
Standardized Residual for Hasil	Mean	.0000	.17025	
	95% Confidence Interval for Mean	Lower Bound	-.3522	
		Upper Bound	.3522	
	5% Trimmed Mean	-.0435		
	Median	-.0587		
	Variance	.696		
	Std. Deviation	.83406		
	Minimum	-1.31		
	Maximum	2.16		
	Range	3.47		
	Interquartile Range	.69		
	Skewness	.908	.472	
	Kurtosis	.712	.918	

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for Hasil	.212	24	.007	.932	24	.109

a. Lilliefors Significance Correction

Kesimpulan Test Normality *Saphiro Wilk* : Sig 0.109 > 0.05 maka data daya lekat terdistribusi normal

Levene's Test of Equality of Error Variances^{a,b}

		Levene Statistic	df1	df2	Sig.
Hasil	Based on Mean	4.314	7	16	.007
	Based on Median	.634	7	16	.722
	Based on Median and with adjusted df	.634	7	6.471	.719
	Based on trimmed mean	3.789	7	16	.013

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: Hasil

b. Design: Intercept + Formula + Perlakuan + Formula * Perlakuan

Tests of Between-Subjects Effects

Dependent Variable: Hasil

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1.844 ^a	7	.263	6.674	.001
Intercept	22.874	1	22.874	579.566	.000
Formula	1.680	3	.560	14.187	.000
Perlakuan	.152	1	.152	3.851	.067
Formula * Perlakuan	.012	3	.004	.103	.957
Error	.631	16	.039		
Total	25.349	24			
Corrected Total	2.475	23			

a. R Squared = .745 (Adjusted R Squared = .633)

Homogeneous Subsets

Hasil

Tukey HSD^{a,b}

Formula	N	Subset		
		1	2	3
Kontrol negatif	6	.5883		
Formula 1	6	.8933	.8933	
Formula 2	6		1.1350	1.1350
Formula 3	6			1.2883
Sig.		.073	.193	.554

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .039.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = 0.05.

Lampiran 18 Uji statistik Komolgorov Smirnov, analisis two way anova uji Uji Efektivitas sediaan lotion ekstrak daun kemangi ungu

Konsentrasi	Daya Proteksi							
	1 jam	2 jam	3 jam	4 jam	5 jam	6 jam	Rata-Rata	SD
2%	85,74	83,34	82,44	81,31	81,92	83,12	82,95	1,55
6%	89,48	88,49	88,43	88,43	85,35	86,2	87,73	1,59
10%	97,82	97,82	96,73	90,37	92,84	92,3	94,65	3,21
Basis	78,15	75,93	76,49	75,23	71,28	61,99	73,18	5,94
Autan	98,66	97,82	97,03	96,73	97,2	96,19	97,27	0,87

Tests of Normality

Uji_efektivitas	Uji_efektivitas	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Uji_efektivitas_lotion	Formula 1	.241	6	.200 [*]	.914	6	.460
	Formula 2	.312	6	.070	.789	6	.046
	Formula 3	.242	6	.200 [*]	.867	6	.213
	Kontrol negatif	.302	6	.093	.805	6	.066
	Kontrol positif	.200	6	.200 [*]	.971	6	.897

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

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

Uji_efektivitas_lotion		Levene	df1	df2	Sig.
		Statistic			
Uji_efektivitas_lotion	Based on Mean	4.806	4	25	.005
	Based on Median	1.750	4	25	.171
	Based on Median and with adjusted df	1.750	4	5.917	.258
	Based on trimmed mean	4.159	4	25	.010

Kesimpulan Test Normality *Shapiro-Wilk* : Sig. > 0.05 maka data efektivitas sediaan terdistribusi normal

ANOVA

Uji_efektivitas_lotion

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2227.174	4	556.794	54.650	.000
Within Groups	254.707	25	10.188		
Total	2481.881	29			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Uji_efektivitas_lotion
Tukey HSD

(I) Uji_efektivitas	(J) Uji_efektivitas	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 1	Formula 2	-4.12833	1.84285	.198	-9.5405	1.2839
	Formula 3	-11.66833*	1.84285	.000	-17.0805	-6.2561
	Kontrol negatif	9.80000*	1.84285	.000	4.3878	15.2122
	Kontrol positif	-14.29333*	1.84285	.000	-19.7055	-8.8811
Formula 2	Formula 1	4.12833	1.84285	.198	-1.2839	9.5405
	Formula 3	-7.54000*	1.84285	.003	-12.9522	-2.1278
	Kontrol negatif	13.92833*	1.84285	.000	8.5161	19.3405
	Kontrol positif	-10.16500*	1.84285	.000	-15.5772	-4.7528
Formula 3	Formula 1	11.66833*	1.84285	.000	6.2561	17.0805
	Formula 2	7.54000*	1.84285	.003	2.1278	12.9522
	Kontrol negatif	21.46833*	1.84285	.000	16.0561	26.8805
	Kontrol positif	-2.62500	1.84285	.618	-8.0372	2.7872
Kontrol negatif	Formula 1	-9.80000*	1.84285	.000	-15.2122	-4.3878
	Formula 2	-13.92833*	1.84285	.000	-19.3405	-8.5161
	Formula 3	-21.46833*	1.84285	.000	-26.8805	-16.0561
	Kontrol positif	-24.09333*	1.84285	.000	-29.5055	-18.6811
Kontrol positif	Formula 1	14.29333*	1.84285	.000	8.8811	19.7055
	Formula 2	10.16500*	1.84285	.000	4.7528	15.5772
	Formula 3	2.62500	1.84285	.618	-2.7872	8.0372
	Kontrol negatif	24.09333*	1.84285	.000	18.6811	29.5055

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

Homogeneous Subsets

Uji_efektivitas_lotion

Tukey HSD^a

Uji_efektivitas	N	Subset for alpha = 0.05		
		1	2	3
Kontrol negatif	6	73.1783		
Formula 1	6		82.9783	
Formula 2	6		87.1067	
Formula 3	6			94.6467
Kontrol positif	6			97.2717
Sig.		1.000	.198	.618

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.