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Lampiran 1. Surat determinasi tanaman



UPT-LABORATORIUM

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Nomor : 340/DET/UPT-LAB/25.04.2022

Hal : Hasil determinasi tumbuhan

Lamp. : -

Nama : Novita Ayu Khusnul Khotimah

NIM : 24185400A

Prodi : S1 Farmasi, Universitas Setia Budi, Surakarta

Nama Sampel : *Rubus fruticosus* L.

HASIL DETERMINASI TUMBUHAN

Klasifikasi

Kingdom : Plantae

Super Divisi : Spermatophyta

Divisi : Magnoliophyta

Kelas : Magnoliopsida/Dicotyledoneae

Ordo : Rosales

Famili : Rosaceae

Genus : *Rubus*

Species : *Rubus fruticosus* L.

Hasil Determinasi menurut Steenis, C.G.G.J.V, Bloembergen, H, Eyma, P.J, 1992 dan Backer & R.C. Bakhuizen van den Brink Jr. (1963) :

1b - 2b - 3b - 4b - 6b - 7b - 9a. Golongan 4. Tumbuh-tumbuhan membelit atau memanjat - 41b - 42b - 43b - 54a - 55b - 57a. Familia Rosaceae. 1b - 2b - 3a - 4b - 9b - 11b - 12b. *Rubus*. 1a - 2b - 4b - 6b - 9b - 10 b - 11a. *Rubus fruticosus* L.

Deskripsi:

- Habitus : Semak/perdu menjalar.
- Batang : Batang lembek, berduri, melengkung/melingkar, memiliki ruas-ruas yang renggang. Jarak antar ruas 2-3 cm, ukuran ruas hampir sama. Pertumbuhan batang cepat.
- Daun : Daun majemuk menyirip ganjil. Helaian daun bentuk oval. Warna hijau pucat saat muda dan hijau gelap saat tua. Panjang helaian 2-3 cm dan lebar 1,5-2 cm. Tepi daun bergerigi.
- Bunga : Bunga malai, berdiameter 2-3 cm. Mahkota warna putih pucat. Kelopak 2 pasang, saling bertolak belakang. Putik halus, 4-5 mm, warna hijau di bagian pangkal dan putih di bagian ujungnya, mudah rontok. Benangsari banyak.
- Buah : Buah berupa butiran-butiran kecil yang saling menyatu satu sama lain, menempel pada ranting. Warna buah ada 3 yang muncul bersamaan, buah yang masih muda warna hijau, buah yang setengah matang warna merah atau kuning, buah yang matang warna hitam.
- Biji : Biji berwarna coklat muda sampai coklat tua, bulat, panjang 2-3 mm dengan lubang tidak beraturan.
- Akar : Akar berwarna putih.

Kepala UPT-LAB
Universitas Setia Budi



Asik Gunawan, Amdk

Surakarta, 25 April 2022
Penanggung jawab
Determinasi Tumbuhan

Dra. Dewi Sulistyawati, M.Sc.

Lampiran 2. Foto tanaman buah *blackberry*



Lampiran 3. Foto alat praktikum

a. Gambar alat spektrofotometri UV



b. pH meter



c. Timbangan analitik



d. Viscometer



e. Alat uji daya lekat



f. Alat uji daya sebar



g. Gambar botol maserasi



h. Gambar rotary evaporator



i. Gambar oven



j. Gambar krus





k. Gambar larutan DPPH



l. Gambar vial



Lampiran 4. Gambar proses maserasi

<p>1. Buah blackberry segar</p> 	<p>2. Proses peredaman sampel</p> 
<p>3. Proses penyaringan dengan kain flannel</p> 	<p>4. Proses penyaringan dengan kertas saring</p> 
<p>5. Filtrat hasil maserasi</p> 	<p>6. Gambar ekstrak kental hasil maserasi</p> 

Lampiran 5. Perhitungan rendemen dan kadar air ekstrak etanol buah *blackberry*.

Perhitungan rendemen ekstrak etanol buah *blackberry*

Keterangan	Berat sampel (g)	Berat ekstrak(g)	Rendemen (%)
Buah <i>blackberry</i>	3.000	179	5,9

Perhitungan rendemen ekstrak

$$= \frac{\text{bobot ekstrak}(g)}{\text{bobot sampel}(g)} \times 100\%$$

$$= \frac{179(g)}{3000(\text{gram})} \times 100\%$$

$$= 5,9\%$$

Perhitungan penetapan kadar air ekstrak etanol buah *blackberry*

Keterangan	Berat ekstrak awal (g)	Berat ekstrak akhir (g)	% Kadar air
Buah <i>blackberry</i>	10,0229	9,8529	1,69
	10,0121	9,8547	1,57
	10,0211	9,8486	1,72
Rata-rata			1,66

Perhitungan kadar air

Rumus	% Kadar air
% Kadar air = $\frac{\text{bobot awal}}{\text{bobot akhir}} \times 100\%$	<ul style="list-style-type: none"> • $= \frac{10,0229 - 9,8529}{10,0229} \times 100\% = 1,69\%$ • $\frac{10,0121 - 9,8547}{10,0121} \times 100\% = 1,57\%$ • $\frac{10,0211 - 9,8486}{10,0211} \times 100\% = 1,72\%$

Perhitungan rata-rata kadar air ekstrak etanol buah *blackberry*

$$\text{Rata-rata \% kadar air} = \frac{\text{total kadar air ekstrak}}{\text{jumlah replikasi}} \times 100\%$$

$$\text{Rata-rata \% kadar air} = \frac{1,69 + 1,57 + 1,72}{3} \times 100\% = 1,66\%$$

Lampiran 6. Perhitungan kadar abu total ekstrak

Keterangan	Berat ekstrak awal (g)	Berat ekstrak akhir (g)	% Kadar abu total
Buah blackberry	1,9967	0,0031	0,1
	2,0110	0,0043	0,2
	2,0201	0,0036	0,2
Rata-rata			0,2

Perhitungan kadar abu total ekstrak buah *blackberry*

Rumus	% kadar abu total
$\% \text{ kadar abu total} = \frac{\text{berat abu (g)}}{\text{berat sampel}} \times 100\%$	$\bullet \frac{0,0031}{1,9967} \times 100\% = 0,1552$
	$\bullet \frac{0,0043}{2,0110} \times 100\% = 0,2138$
	$\bullet \frac{0,0036}{2,0201} \times 100\% = 0,1782$

Perhitungan rata-rata % kadar abu total ekstrak buah *blackberry*

$$\% \text{ kadar abu total} = \frac{\text{jumlah total kadar abu}}{\text{jumlah replikasi}} \times 100\%$$

$$\% \text{ kadar abu total} = \frac{0,1+0,2+0,2}{3} \times 100\% = 0,1666 = 0,2\%$$

Lampiran 7. Perhitungan kadar abu tidak larut asam

Keterangan	Berat sampel awal (g)	Berat abu tidak larut asam (g)	% kadar abu tidak larut asam
Buah blackberry	1,9967	0,0025	0,1
	2,0110	0,0031	0,1
	2,0201	0,0028	0,1
Rata-rata			0,1

Perhitungan kadar abu tidak larut asam

Rumus	Perhitungan
$\% \text{ kadar abu tidak larut asam} = \frac{\text{bobot abu (g)}}{\text{bobot sampel (g)}} \times 100\%$	<ul style="list-style-type: none"> • $\frac{0,0025}{1,9967} \times 100\% = 0,1252$
	<ul style="list-style-type: none"> • $\frac{0,0031}{2,0110} \times 100\% = 0,1541$
	<ul style="list-style-type: none"> • $\frac{0,0028}{2,0201} \times 100\% = 0,1386$

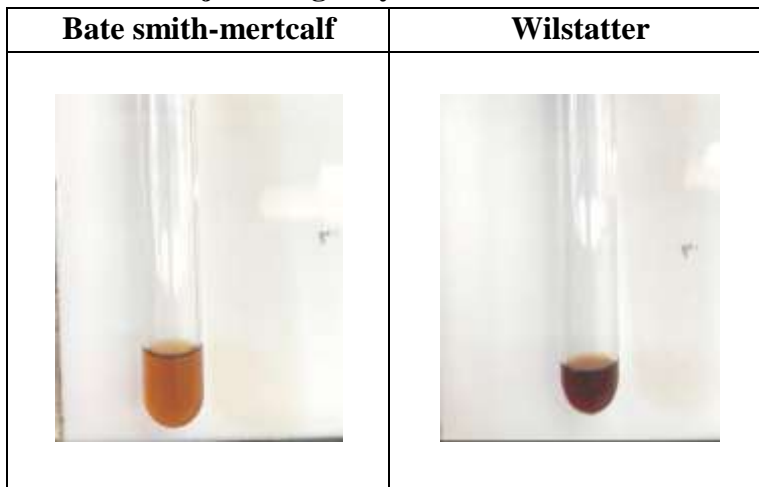
Perhitungan rata-rata % kadar abu tidak larut asam ekstrak buah *blackberry*

$$\% \text{ kadar abu tidak larut asam} = \frac{\text{jumlah total kadar abu}}{\text{jumlah replikasi}} \times 100\%$$

$$\% \text{ kadar abu tidak larut asam} = \frac{0,1+0,1+0,1}{3} \times 100\% = 0,1\%$$

Lampiran 8. Hasil uji identifikasi kandungan kimia ekstrak etanol buah *blackberry*

A. Identifikasi uji tabung senyawa Flavonoid



Senyawa	Pereaksi	Hasil	Pustaka (Theodora et al.,2019)	Keterangan
Flavonoid	Wilstater	Terbentuk warna merah	Warna kuning sampai merah	+
Flavonoid	Bate smith-mertcalf	Terbentuk warna jingga	Warna jingga	+

B. Identifikasi uji tabung senyawa tannin



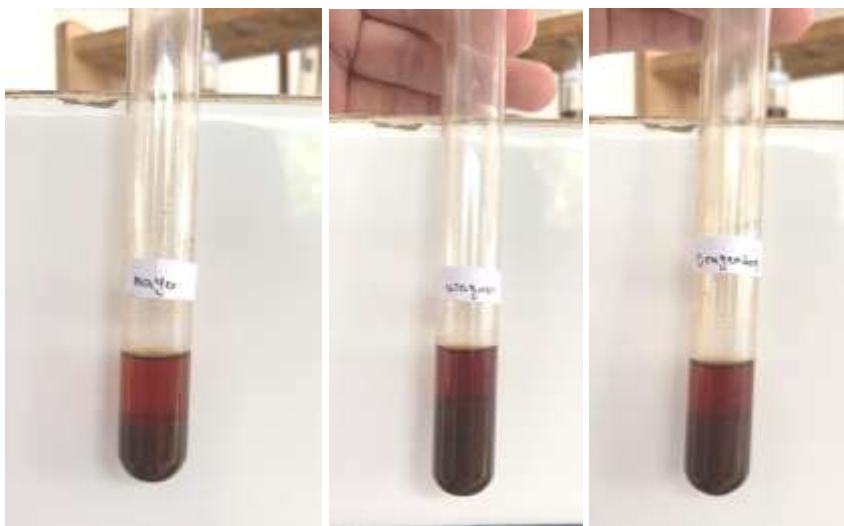
Senyawa	Pereaksi	Hasil	Pustaka (Theodora et al.,2019)	Keterangan
Tannin	FeCl ₃	Terbentuk warna hitam	Warna biru tua, hijau tua atau hitam pekat	+

C. Identifikasi uji tabung senyawa saponin



Senyawa	Pereaksi	Hasil	Pustaka (Depkes RI,1995)	Keterangan
Saponin	HCL 2N	Terbentuk warna hitam	Terbentuk busa kurang dari 10 menit, dan jika ditetes HCL 2N, busa masih ada	+

D. Identifikasi uji tabung senyawa alkaloid



Senyawa	Pereaksi	Hasil	Pustaka (kusumawati et al., 2003)	Keterangan
Alkaloid	Pereaksi meyer	Terbentuk endapan coklat	Endapan putih atau kuning	-
	Pereaksi wagner	Terbentuk endapan coklat	Endapan coklat	+
	Pereaksi dragendorff	Terbentuk endapan coklat	Endapan coklat	-

Lampiran 9. Perhitungan bahan formula lotion ekstrak etanol buah *blackberry*

Bahan	Formula (%)				Fungsi
	F1	F2	F3	F4	
Ekstrak Etanol Buah <i>Blackberry</i>	-	2,0	3,0	4,0	Zat aktif
Dimethicone	2,0	2,0	2,0	2,0	Pelembut
Paraffin cair	1,0	1,0	1,0	1,0	Emolien
Asam <i>stearate</i>	1,7	1,7	1,7	1,7	Emulgator
Setil alcohol	1,6	1,6	1,6	1,6	Pengental
Nipasol	0,1	0,1	0,1	0,1	Pengawet
Nipagin	0,15	0,15	0,15	0,15	Pengawet
<i>Trietanolamine</i>	1,0	1,0	1,0	1,0	Emulgator
Pewangi	qs	qs	qs	qs	Pewangi
Aquades	100	100	100	100	Pelarut

*Keterangan :

Formula F1: Blanko (dasar lotion tanpa ekstrak)

Formula F2: lotion ekstrak etanol buah *blackberry* 2%

Formula F3: lotion ekstrak etanol buah *blackberry* 3%

Formula F4: lotion ekstrak etanol buah *blackberry* 4%

Lampiran 10. Hasil sediaan lotion ekstrak etanol buah blackberry

1. Sebelum stabilitas

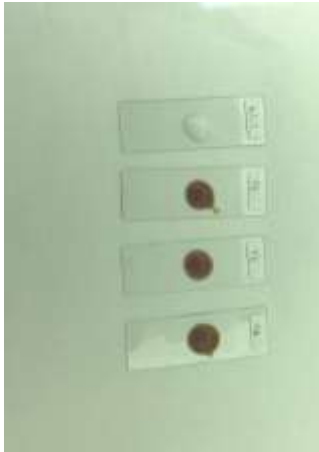


2. Sesudah stabilitas



Lampiran 11. Uji mutu fisik lotion ekstrak buah *blackberry*

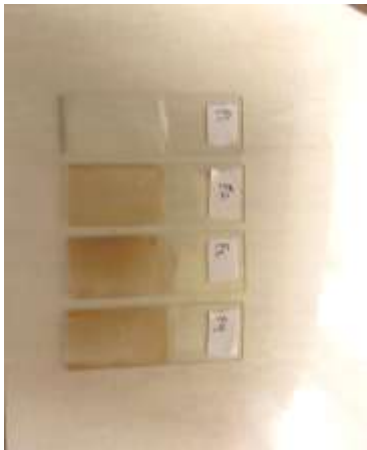
a. Gambar uji organoleptis



b. Gambar uji pH



c. Gambar homogenitas



d. Gambar uji daya sebar



e. Gambar uji viskositas



f. Gambar uji daya lekat



Gambar tipe emulsi



Lampiran 12. Pengujian aktivitas antioksidan

Pembuatan larutan stok DPPH

Serbuk DPPH untuk uji aktivitas antioksidan ditimbang sesuai dengan hasil perhitungan berikut :

$$\begin{aligned} \text{Penimbangan DPPH} &= \text{BM DPPH} \times \text{volume larutan} \times \text{molaritas DPPH} \\ &= 394,32 \text{ g/mol} \times 0,100 \text{ liter} \times 0,0004 \text{ M} \\ &= 0,01578 \text{ gram} \\ &= 15,78 \text{ mg} \approx 15,8 \text{ mg} \end{aligned}$$

Serbuk DPPH sebanyak 15,8 mg dilarutkan dengan etanol *p.a* dalam labu takar 100 mL.

Pembuatan larutan stok ekstrak buah blackberry

Pembuatan larutan ekstrak dilakukan dengan menimbang ekstrak sebanyak 100 mg dan dimasukkan dalam labu tentukur 100 ml selanjutnya dilarutkan dengan etanol *p.a* sampai tanda batas sehingga diperoleh konsentrasi 1000 ppm.

$$\begin{aligned} \text{Konsentrasi ekstrak} &= 100 \text{ mg} / 100 \text{ mL} \\ &= 100 \text{ mg} / 1000 \text{ ml} \\ &= 1000 \text{ ppm} \end{aligned}$$

Larutan stok ekstrak 1000 ppm diencerkan menjadi 100 ppm kemudian dibuat 5 seri pengenceran yakni 10 ppm, 20 ppm, 30 ppm, 40 ppm, dan 50 ppm sebanyak 10 mL.

Konsentrasi 10 ppm

$$\begin{aligned} V_1 \times C_1 &= V_2 \times C_2 \\ V_1 \times 100 \text{ ppm} &= 10 \times 10 \text{ ppm} \\ V_1 &= 1 \text{ mL} \end{aligned}$$

Konsentrasi 20 ppm

$$\begin{aligned} V_1 \times C_1 &= V_2 \times C_2 \\ V_1 \times 100 \text{ ppm} &= 10 \times 20 \text{ ppm} \\ V_1 &= 2 \text{ mL} \end{aligned}$$

Konsentrasi 30 ppm

$$\begin{aligned} V_1 \times C_1 &= V_2 \times C_2 \\ V_1 \times 100 \text{ ppm} &= 10 \times 30 \text{ ppm} \\ V_1 &= 3 \text{ mL} \end{aligned}$$

Konsentrasi 40 ppm

$$\begin{aligned} V_1 \times C_1 &= V_2 \times C_2 \\ V_1 \times 100 \text{ ppm} &= 10 \times 40 \text{ ppm} \\ V_1 &= 4 \text{ mL} \end{aligned}$$

Konsentrasi 50 ppm

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

$$V1 \times 100 \text{ ppm} = 10 \times 50 \text{ ppm}$$

$$V1 = 5 \text{ mL}$$

Pembuatan larutan stok sediaan basis lotion (Kontrol -)

Pembuatan larutan stok sediaan basis lotion dilakukan dengan menimbang basis sebanyak 100 mg dan dimasukkan dalam labu terukur 100 ml selanjutnya dilarutkan dengan etanol *p.a* sampai tanda batas sehingga diperoleh konsentrasi 1000 ppm.

$$\text{Konsentrasi (K-)} = 100 \text{ mg} / 100 \text{ mL}$$

$$= 100 \text{ mg} / 1000 \text{ ml}$$

$$= 1000 \text{ ppm}$$

Larutan basis 100 ppm diencerkan menjadi 5 seri pengenceran yakni 100 ppm, 200 ppm, 300 ppm, 400 ppm, dan 500 ppm sebanyak 10 mL.

Konsentrasi 100 ppm

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

$$V1 \times 1000 \text{ ppm} = 10 \times 100 \text{ ppm}$$

$$V1 = 1 \text{ mL}$$

Konsentrasi 200 ppm

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

$$V1 \times 1000 \text{ ppm} = 10 \times 200 \text{ ppm}$$

$$V1 = 2 \text{ mL}$$

Konsentrasi 300 ppm

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

$$V1 \times 1000 \text{ ppm} = 10 \times 300 \text{ ppm}$$

$$V1 = 3 \text{ mL}$$

Konsentrasi 400 ppm

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

$$V1 \times 1000 \text{ ppm} = 10 \times 400 \text{ ppm}$$

$$V1 = 4 \text{ mL}$$

Konsentrasi 500 ppm

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

$$V1 \times 1000 \text{ ppm} = 10 \times 500 \text{ ppm}$$

$$V1 = 5 \text{ mL}$$

Pembuatan larutan stok formula lotion ekstrak etanol buah blackberry

1. Pembuatan larutan lotion ekstrak etanol buah blackberry formula 2 dilakukan dengan menimbang sediaan sebanyak 500 mg dan dimasukkan dalam labu tentukur 100 ml selanjutnya dilarutkan dengan etanol *p.a* sampai tanda batas sehingga diperoleh konsentrasi 5000 ppm.

$$\begin{aligned} \text{Penimbangan larutan stok lotion 2\%} &= \frac{\text{Bobot ekstrak} \times \text{Bobot lotion}}{\text{Bobot ekstrak dalam lotion}} \\ &= \frac{10 \text{ mg} \times 100.000 \text{ mg}}{2000 \text{ mg}} \\ &= 500 \text{ mg} \end{aligned}$$

Larutan stok sediaan 5000 ppm diencerkan menjadi 100 ppm kemudian dibuat 5 seri pengenceran yakni 20 ppm, 40 ppm, 60 ppm, 80 ppm, dan 100 ppm sebanyak 10 mL.

2. Pembuatan larutan lotion ekstrak etanol buah blackberry formula 3 dilakukan dengan menimbang sediaan sebanyak 333 mg dan dimasukkan dalam labu tentukur 100 ml selanjutnya dilarutkan dengan etanol *p.a* sampai tanda batas sehingga diperoleh konsentrasi 3333 ppm.

$$\begin{aligned} \text{Penimbangan larutan stok lotion 3\%} &= \frac{\text{Bobot ekstrak} \times \text{Bobot lotion}}{\text{Bobot ekstrak dalam lotion}} \\ &= \frac{10 \text{ mg} \times 100.000 \text{ mg}}{3000 \text{ mg}} \\ &= 333 \text{ mg} \end{aligned}$$

Larutan stok sediaan 3333 ppm diencerkan menjadi 100 ppm kemudian dibuat 5 seri pengenceran yakni 20 ppm, 40 ppm, 60 ppm, 80 ppm, dan 100 ppm sebanyak 10 mL.

3. Pembuatan larutan lotion ekstrak etanol buah blackberry formula 4 dilakukan dengan menimbang sediaan sebanyak 250 mg dan dimasukkan dalam labu tentukur 100 ml selanjutnya dilarutkan dengan etanol *p.a* sampai tanda batas sehingga diperoleh konsentrasi 2500 ppm.

$$\begin{aligned} \text{Penimbangan larutan stok lotion 4\%} &= \frac{\text{Bobot ekstrak} \times \text{Bobot lotion}}{\text{Bobot ekstrak dalam lotion}} \\ &= \frac{10 \text{ mg} \times 100.000 \text{ mg}}{4000 \text{ mg}} \\ &= 250 \text{ mg} \end{aligned}$$

Larutan stok sediaan 2500 ppm diencerkan menjadi 100 ppm kemudian dibuat 5 seri pengenceran yakni 20 ppm, 40 ppm, 60 ppm, 80 ppm, dan 100 ppm sebanyak 10 mL.

Konsentrasi 20 ppm

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 100 \text{ ppm} = 10 \times 20 \text{ ppm}$$

$$V_1 = 2 \text{ mL}$$

Konsentrasi 40 ppm

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 100 \text{ ppm} = 10 \times 40 \text{ ppm}$$

$$V_1 = 4 \text{ mL}$$

Konsentrasi 60 ppm

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 100 \text{ ppm} = 10 \times 60 \text{ ppm}$$

$$V_1 = 6 \text{ mL}$$

Konsentrasi 80 ppm

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 100 \text{ ppm} = 10 \times 80 \text{ ppm}$$

$$V_1 = 8 \text{ mL}$$

Konsentrasi 100 ppm

$$V_1 \times C_1 = V_2 \times C_2$$

$$V_1 \times 100 \text{ ppm} = 10 \times 100 \text{ ppm}$$

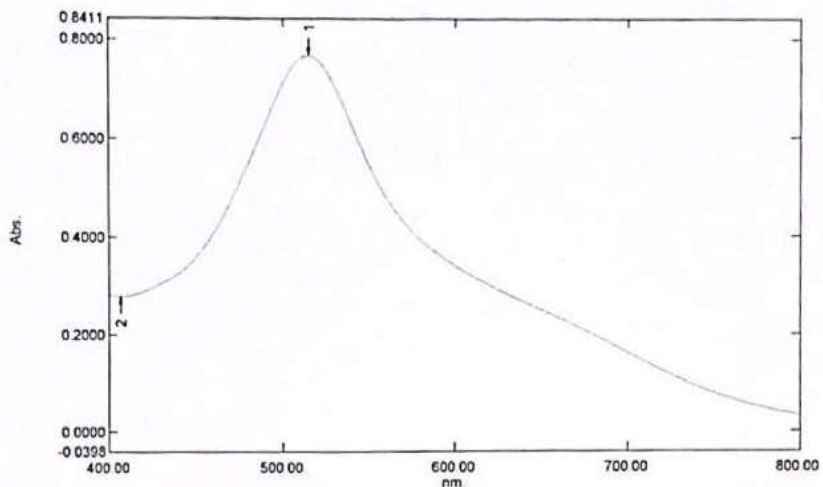
$$V_1 = 10 \text{ mL}$$

Lampiran 13. Hasil penentuan Panjang gelombang maksimum

Spectrum Peak Pick Report

03/23/2022 10:26:44 AM

Data Set: File_220323_102500 - RawData



[Measurement Properties]
 Wavelength Range (nm): 400.00 to 800.00
 Scan Speed: Fast
 Sampling Interval: 1.0
 Auto Sampling Interval: Disabled
 Scan Mode: Single

No.	P/V	Wavelength	Abs.	Description
1	Ⓜ	515.00	0.7677	
2	Ⓜ	407.00	0.2784	

[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 14. Hasil pembacaan *operating time***1. Ekstrak etanol buah blackberry****Kinetics Data Print Report**

03/25/2022 02:02:49 PM

Time (Minute)	RawData ...
0 000	0 586
1 000	0 585
2 000	0 583
3 000	0 582
4 000	0 581
5 000	0 580
6 000	0 578
7 000	0 577
8 000	0 576
9 000	0 575
10 000	0 574
11 000	0 574
12 000	0 573
13 000	0 573
14 000	0 572
15 000	0 571
16 000	0 570
17 000	0 570
18 000	0 570
19 000	0 569
20 000	0 568
21 000	0 568
22 000	0 568
23 000	0 567
24 000	0 567
25 000	0 567
26 000	0 566
27 000	0 566
28 000	0 566
29 000	0 567
30 000	0 565
31 000	0 565
32 000	0 564
33 000	0 564
34 000	0 564
35 000	0 563
36 000	0 563
37 000	0 563
38 000	0 563
39 000	0 563
40 000	0 562
41 000	0 563
42 000	0 562
43 000	0 562
44 000	0 562
45 000	0 562
46 000	0 561
47 000	0 561
48 000	0 561
49 000	0 561
50 000	0 561

Kinetics Data Print Report

03/25/2022 02:02:49 PM

Time (Minute)	RawData ...
51 000	0 561
52 000	0 560
53 000	0 560
54 000	0 561
55 000	0 560
56 000	0 560
57 000	0 560
58 000	0 560
59 000	0 560
60 000	0 559

2. Formula 2

Kinetics Data Print Report

Time (Minute)	RawData ...
0.000	0.710
1.000	0.709
2.000	0.708
3.000	0.707
4.000	0.706
5.000	0.705
6.000	0.704
7.000	0.703
8.000	0.702
9.000	0.703
10.000	0.702
11.000	0.702
12.000	0.701
13.000	0.701
14.000	0.701
15.000	0.700
16.000	0.700
17.000	0.699
18.000	0.699
19.000	0.699
20.000	0.699
21.000	0.698
22.000	0.698
23.000	0.697
24.000	0.697
25.000	0.697
26.000	0.697
27.000	0.697
28.000	0.696
29.000	0.697
30.000	0.696
31.000	0.696
32.000	0.695
33.000	0.696
34.000	0.696
35.000	0.696
36.000	0.695
37.000	0.694
38.000	0.695
39.000	0.694
40.000	0.694
41.000	0.694
42.000	0.694
43.000	0.695
44.000	0.695
45.000	0.694
46.000	0.694
47.000	0.695
48.000	0.694
49.000	0.694
50.000	0.694

Kinetics Data Print Report

Time (Minute)	RawData ...
51.000	0.694
52.000	0.694
53.000	0.693
54.000	0.693
55.000	0.694
56.000	0.693
57.000	0.693
58.000	0.694
59.000	0.694
60.000	0.693

3. Formula 3

Kinetics Data Print Rep

Time (Minute)	RawData ...
0.000	0.611
1.000	0.610
2.000	0.609
3.000	0.608
4.000	0.606
5.000	0.608
6.000	0.606
7.000	0.606
8.000	0.606
9.000	0.605
10.000	0.605
11.000	0.605
12.000	0.604
13.000	0.604
14.000	0.604
15.000	0.604
16.000	0.603
17.000	0.603
18.000	0.603
19.000	0.603
20.000	0.603
21.000	0.602
22.000	0.602
23.000	0.602
24.000	0.602
25.000	0.602
26.000	0.602
27.000	0.602
28.000	0.602
29.000	0.601
30.000	0.601
31.000	0.601
32.000	0.601
33.000	0.601
34.000	0.601
35.000	0.601
36.000	0.601
37.000	0.601
38.000	0.601
39.000	0.601
40.000	0.601
41.000	0.601
42.000	0.601
43.000	0.601
44.000	0.601
45.000	0.601
46.000	0.601
47.000	0.601
48.000	0.601
49.000	0.601
50.000	0.601

Kinetics Data Print Report

Time (Minute)	RawData ...
51.000	0.601
52.000	0.600
53.000	0.601
54.000	0.601
55.000	0.601
56.000	0.601
57.000	0.600
58.000	0.601
59.000	0.601
60.000	0.601

4. Formula 4

Kinetics Data Print Report

Time (Minute)	RawData ...
0.000	0.529
1.000	0.524
2.000	0.522
3.000	0.518
4.000	0.515
5.000	0.513
6.000	0.511
7.000	0.508
8.000	0.506
9.000	0.504
10.000	0.502
11.000	0.501
12.000	0.499
13.000	0.498
14.000	0.497
15.000	0.496
16.000	0.496
17.000	0.494
18.000	0.494
19.000	0.493
20.000	0.492
21.000	0.491
22.000	0.490
23.000	0.490
24.000	0.489
25.000	0.488
26.000	0.487
27.000	0.487
28.000	0.485
29.000	0.485
30.000	0.484
31.000	0.483
32.000	0.483
33.000	0.481
34.000	0.481
35.000	0.480
36.000	0.479
37.000	0.478
38.000	0.477
39.000	0.476
40.000	0.476
41.000	0.475
42.000	0.474
43.000	0.474
44.000	0.473
45.000	0.472
46.000	0.471
47.000	0.471
48.000	0.470
49.000	0.469
50.000	0.469

Kinetics Data Print Report

Time (Minute)	RawData ...
51.000	0.468
52.000	0.468
53.000	0.467
54.000	0.466
55.000	0.466
56.000	0.465
57.000	0.465
58.000	0.464
59.000	0.463
60.000	0.463

Lampiran 15. Perhitungan aktivitas antioksidan dan IC₅₀

Sampel	Replikasi	Konsentrasi	Abs sampel	%inhibisi	Abs DPPH	Regresi linier
Ekstrak etanol buah blackberry	1	10	0,682	22,4118	0,879	a: 11,08077
		20	0,603	31,3993		b: 1,105802
		30	0,482	45,1650		r: 0,994418
		40	0,371	57,7929		
		50	0,312	64,5051		
	2	10	0,635	27,7588	0,879	a: 18,37315
		20	0,577	34,3572		b: 0,920364
		30	0,451	48,6917		r: 0,99009
		40	0,384	56,3140		
		50	0,327	62,7986		
	3	10	0,692	21,2742	0,879	a: 12,84414
		20	0,561	36,1775		b: 1,045506
		30	0,484	44,9374		r: 0,994941
		40	0,404	54,0387		
		50	0,311	64,6189		
F1	1	100	0,795	5,2443	0,839	a: 2,3361
		200	0,751	10,4887		b: 0,0353
		300	0,733	12,6341		r: 0,9931
		400	0,703	16,2098		
		500	0,671	20,0238		
	2	100	0,799	4,7676	0,839	a: 0,9654
		200	0,774	7,7473		b: 0,0342
		300	0,754	10,1311		r: 0,9913
		400	0,709	15,4946		
		500	0,688	17,9976		
	3	100	0,795	5,2443	0,839	a: 1,0727
		200	0,769	8,3433		b: 0,0369
		300	0,741	11,6806		r: 0,9951
		400	0,711	15,2563		
		500	0,669	20,2622		
F2	1	20	0,729	14,8364	0,856	a: 7,1379
		40	0,668	21,9626		b: 0,3779
		60	0,593	30,7243		r: 0,9967
		80	0,549	35,8645		
		100	0,465	45,6776		
	2	20	0,725	15,3037	0,856	a: 7,9206
		40	0,647	24,4159		b: 0,3692
		60	0,617	27,9206		r: 0,9909
		80	0,543	36,5654		
		100	0,461	46,1449		
	3	20	0,721	15,7710	0,856	a: 8,1308
		40	0,651	23,9486		b: 0,3657
		60	0,612	28,5047		r: 0,9905
		80	0,551	35,6308		
		100	0,458	46,4953		
F3	1	20	0,733	15,5530	0,868	a: 5,4378
		40	0,651	25,0000		b: 0,4885

Sampel	Replikasi	Konsentrasi	Abs sampel	%inhibisi	Abs DPPH	Regresi linier	
		60	0,574	33,8710		r: 0,9995	
		80	0,479	44,8157			
		100	0,395	54,4931			
	2	20	0,729	16,0138	0,868	a: 4,7581	
		40	0,658	24,1935		b: 0,4902	
		60	0,587	32,3733		r: 0,9932	
		80	0,501	42,2811			
		100	0,382	55,9908			
	3	20	0,742	14,5161	0,868	a: 2,442	
		40	0,682	21,4286		b: 0,4664	
		60	0,581	33,0645		r: 0,9981	
		80	0,501	42,2811			
		100	0,376	56,6820			
	F4	1	20	0,708	20,8054	0,894	a: 9,1275
			40	0,609	31,8792		b: 0,5649
60			0,517	42,1700	r: 0,9995		
80			0,411	54,0268			
100			0,302	66,2192			
2		20	0,703	21,3647	0,894	a: 9,9329	
		40	0,606	32,2148		b: 0,557	
		60	0,512	42,7293		r: 0,9998	
		80	0,406	54,5861			
		100	0,305	65,8837			
3		20	0,694	22,3714	0,894	a: 10,593	
		40	0,604	32,4385		b: 0,5554	
		60	0,509	43,0649		r: 0,9994	
		80	0,401	55,1454			
		100	0,299	66,5548			

Sampel	IC ₅₀			Rata-rata	±SD
	R1	R2	R3		
Ekstrak	35,20	34,36	35,54	35,03	0,61
F1	1351,01	1433,45	1324,19	1369,55	56,94
F2	113,42	113,99	114,50	113,97	0,54
F3	91,23	92,29	91,19	91,57	0,62
F4	72,36	71,93	70,96	71,75	0,71

Perhitungan % inhibisi

Formula 4

Lotion ekstrak etanol buah blackberry 4%

$$\begin{aligned} 1. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\ &= \frac{0,894 - 0,708}{0,894} \times 100\% \\ &= 20,8054 \end{aligned}$$

$$\begin{aligned} 2. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\ &= \frac{0,894 - 0,609}{0,894} \times 100\% \\ &= 31,8792 \end{aligned}$$

$$\begin{aligned} 3. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\ &= \frac{0,894 - 0,517}{0,894} \times 100\% \\ &= 42,1700 \end{aligned}$$

$$\begin{aligned} 4. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\ &= \frac{0,894 - 0,411}{0,894} \times 100\% \\ &= 54,0268 \end{aligned}$$

$$\begin{aligned} 5. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\ &= \frac{0,894 - 0,302}{0,894} \times 100\% \\ &= 66,2192 \end{aligned}$$

Replikasi 2

$$\begin{aligned} 1. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\ &= \frac{0,894 - 0,703}{0,894} \times 100\% \\ &= 21,3647 \end{aligned}$$

$$\begin{aligned} 2. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\ &= \frac{0,894 - 0,606}{0,894} \times 100\% \\ &= 32,2148 \end{aligned}$$

$$\begin{aligned} 3. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\ &= \frac{0,894 - 0,512}{0,894} \times 100\% \\ &= 42,7293 \end{aligned}$$

$$\begin{aligned}
 4. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\
 &= \frac{0,894 - 0,406}{0,894} \times 100\% \\
 &= 54,5861
 \end{aligned}$$

$$\begin{aligned}
 5. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\
 &= \frac{0,894 - 0,305}{0,894} \times 100\% \\
 &= 65,8837
 \end{aligned}$$

Replikasi 3

$$\begin{aligned}
 1. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\
 &= \frac{0,894 - 0,694}{0,894} \times 100\% \\
 &= 22,3714
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\
 &= \frac{0,894 - 0,604}{0,894} \times 100\% \\
 &= 32,4385
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\
 &= \frac{0,894 - 0,509}{0,894} \times 100\% \\
 &= 43,0649
 \end{aligned}$$

$$\begin{aligned}
 4. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\
 &= \frac{0,894 - 0,401}{0,894} \times 100\% \\
 &= 55,1454
 \end{aligned}$$

$$\begin{aligned}
 5. \quad \% \text{ inhibisi} &= \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\% \\
 &= \frac{0,894 - 0,299}{0,894} \times 100\% \\
 &= 66,5548
 \end{aligned}$$

Perhitungan nilai IC₅₀

$$\begin{aligned}
 Y &= a + bx \\
 50 &= 9,1275 + 0,5649 x \\
 &= \frac{50 - 9,1275}{0,5649} \\
 &= 72,3535
 \end{aligned}$$

$$\begin{aligned} Y &= a+bx \\ 50 &= 9,9329 + 0,557 x \\ &= \frac{50 - 9,9329}{0,557} \\ &= 71,9337 \end{aligned}$$

$$\begin{aligned} Y &= a+bx \\ 50 &= 10,593 + 0,5554 x \\ &= \frac{50 - 10,593}{0,5554} \\ &= 70,9524 \end{aligned}$$

Lampiran 16. Hasil uji mutu fisik lotion ekstrak etanol buah *blackberry*

1. Hasil uji mutu fisik sediaan lotion ekstrak etanol buah *blackberry*

Formula	Konsistensi		Bau		Warna	
	Sebelum cycling test	Sesudah cycling test	Sebelum cycling test	Sesudah cycling test	Sebelum cycling test	Sesudah cycling test
F1	Kental	Kental	Strawberry	Strawberry	Putih	Putih
F2	Kental	Kental	Strawberry	Strawberry	Coklat	Coklat
F3	Kental	Kental	Strawberry	Strawberry	Coklat	Coklat
F4	Kental	Kental	Strawberry	Strawberry	Coklat	Coklat

Keterangan:

F1 = kontrol negatif (lotion tanpa zat aktif)

F2 = variasi konsentrasi ekstrak etanol buah *blackberry* 2%

F3 = variasi konsentrasi ekstrak etanol buah *blackberry* 3%

F4 = variasi konsentrasi ekstrak etanol buah *blackberry* 4%

2. Hasil uji pH sediaan lotion ekstrak etanol buah *blackberry* sebelum *cycling test* dan sesudah *cycling test*

Formula	Waktu	pH			Rata-rata	SD
		Replikasi 1	Replikasi 2	Replikasi 3		
F1	Sebelum	7,15	7,18	7,13	7,15	0,03
	Sesudah	7,13	7,09	7,13	7,12	0,02
F2	Sebelum	6,79	6,76	6,74	6,76	0,03
	Sesudah	6,76	6,67	6,71	6,71	0,05
F3	Sebelum	6,59	6,67	6,62	6,63	0,04
	Sesudah	6,54	6,56	6,49	6,53	0,04
F4	Sebelum	6,49	6,59	6,46	6,51	0,07
	Sesudah	6,39	6,40	6,41	6,40	0,01

Keterangan:

F1 = kontrol negatif (lotion tanpa zat aktif)

F2 = variasi konsentrasi ekstrak etanol buah *blackberry* 2%

F3 = variasi konsentrasi ekstrak etanol buah *blackberry* 3%

F4 = variasi konsentrasi ekstrak etanol buah *blackberry* 4%

3. Hasil uji daya lekat lotion ekstrak etanol buah *blackberry* sebelum *cycling test* dan sesudah *cycling test*

Formula	Waktu	Daya lekat			Rata-rata	SD
		Replikasi 1	Replikasi 2	Replikasi 3		
F1	Sebelum	1,10	1,13	1,11	1,11	0,02
	Sesudah	1,00	1,01	1,02	1,01	0,01
F2	Sebelum	1,27	1,28	1,24	1,26	0,02
	Sesudah	1,20	1,21	1,18	1,20	0,02

F3	Sebelum	1,59	1,61	1,63	1,61	0,02
	Sesudah	1,58	1,59	1,60	1,59	0,01
F4	Sebelum	2,20	2,24	2,19	2,21	0,03
	Sesudah	2,16	2,22	2,18	2,19	0,03

F1 = kontrol negatif (lotion tanpa zat aktif)

F2 = variasi konsentrasi ekstrak etanol buah *blackberry* 2%

F3 = variasi konsentrasi ekstrak etanol buah *blackberry* 3%

F4 = variasi konsentrasi ekstrak etanol buah *blackberry* 4%

4. Hasil uji daya sebar lotion ekstrak etanol buah *blackberry* sebelum *cycling test* dan sesudah *cycling test*

Formula	Daya sebar (cm)						
	Waktu	Beban	Replikasi 1	Replikasi 2	Replikasi 3	Rata-rata	SD
F1	Sebelum	0	6,2	6,0	6,4	6,20	0,20
		50	6,4	6,5	6,7	6,53	0,15
		100	7,0	7,2	7,3	7,17	0,15
		150	7,2	7,4	7,6	7,40	0,20
	Sesudah	0	6,3	6,2	6,5	6,33	0,15
		50	6,6	6,7	6,7	6,67	0,06
		100	7,3	7,2	7,2	7,23	0,06
		150	7,4	7,5	7,7	7,53	0,15
F2	Sebelum	0	5,7	5,8	5,7	5,77	0,06
		50	5,9	5,8	6,0	5,90	0,10
		100	6,3	6,2	6,4	6,30	0,10
		150	6,5	6,6	6,9	6,67	0,21
	Sesudah	0	6,1	6,3	6,4	6,20	0,15
		50	6,3	6,4	6,5	6,40	0,10
		100	6,7	6,6	6,8	6,70	0,10
		150	6,9	7,0	7,3	7,07	0,21
F3	Sebelum	0	5,4	5,3	5,2	5,30	0,10
		50	5,7	5,2	5,9	5,60	0,36
		100	6,3	5,7	6,1	6,03	0,31
		150	6,3	5,8	6,3	6,13	0,29
	Sesudah	0	5,8	5,6	5,5	5,63	0,15
		50	6,0	5,4	6,1	5,83	0,38
		100	6,7	6,1	6,7	6,50	0,35
		150	6,5	6,2	6,3	6,33	0,15
F4	Sebelum	0	4,7	5,2	4,9	4,93	0,25
		50	5,1	5,5	5,2	5,27	0,21
		100	5,3	5,7	5,9	5,63	0,31
		150	5,7	6,1	6,2	6,00	0,26
	Sesudah	0	4,9	5,4	5,2	5,17	0,25
		50	5,4	5,7	5,3	5,57	0,21
		100	5,7	6,2	6,4	6,07	0,36
		150	6,1	6,3	6,7	6,37	0,31

5. Hasil uji viskositas lotion ekstrak etanol buah *blackberry* sebelum *cycling test* dan sesudah *cycling test*

Formula	Viskositas (Cp)					
	Waktu	Replikasi 1	Replikasi 2	Replikasi 3	Rata- rata	SD
F1	Sebelum	2500	2500	2500	2500	0
	Sesudah	2000	1700	2500	2000	300
F2	Sebelum	5000	5000	5000	5000	0
	Sesudah	5000	4000	4000	4333	577
F3	Sebelum	8000	8000	8000	8000	0
	Sesudah	8000	8000	8000	8000	0
F4	Sebelum	11000	11000	11000	11000	0
	Sesudah	11000	11000	11000	11000	0

Keterangan:

F1 = kontrol negatif (lotion tanpa zat aktif)

F2 = variasi konsentrasi ekstrak etanol buah *blackberry* 2%

F3 = variasi konsentrasi ekstrak etanol buah *blackberry* 3%

F4 = variasi konsentrasi ekstrak etanol buah *blackberry* 4%

Lampiran 17. Uji statistik mutu fisik lotion

1. Uji pH lotion

Tests of Normality

	uji_pH	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
uji_pH_lotion_eks	F1_Ekstrak,2	.253	3	.	.964	3	.637
	2	.253	3	.	.964	3	.637
	3	.253	3	.	.964	3	.637
	4	.328	3	.	.871	3	.298

a. Lilliefors Significance Correction

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
uji_pH_lotion_eks	F1_Ekstrak,2	3	7.1633	.01528	.00882	7.1254	7.2013	7.15	7.18
	2	3	6.7567	.01528	.00882	6.7187	6.7946	6.74	6.77
	3	3	6.8400	.04583	.02646	6.5262	6.7538	6.59	6.68
	4	3	6.5167	.06429	.03712	6.3570	6.6764	6.47	6.59
	Total	12	6.7692	.25607	.07392	6.6065	6.9319	6.47	7.18

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
	Based on Median	.692	3	8	.582
	Based on Median and with adjusted df	.692	3	3.509	.608
	Based on trimmed mean	3.399	3	8	.074
F1_lotionkontrolnegatif	Based on Mean	. ^a			
F2_lotionekstrak_2	Based on Mean	. ^a			
F3_lotionekstrak_3	Based on Mean	. ^a			
F3_lotionekstrak_4	Based on Mean	. ^a			

a. Levene's Test of Equality of Error Variances is not computed because there are less than two nonempty groups.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
	Within Groups	.013	8	.002		
	Total	.721	11			

2. Uji daya lekat lotion ekstrak etanol buah blackberry

Tests of Normality

	uji_dayalekat	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
uji_dayalekatlotion	1	.175	3	.	1.000	3	1.000
	2	.232	3	.	.980	3	.726
	3	.253	3	.	.964	3	.637
	4	.353	3	.	.824	3	.174

a. Lilliefors Significance Correction

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
uji_dayalekatlotion	1	3	1.0800	.02000	.01155	1.0303	1.1297	1.06	1.10
	2	3	1.2767	.04041	.02333	1.1763	1.3771	1.24	1.32
	3	3	1.6933	.01528	.00882	1.6554	1.7313	1.68	1.71
	4	3	2.1267	.05508	.03180	1.9899	2.2635	2.09	2.19
Total	12	1.5442	.42172	.12174		1.2762	1.8121	1.06	2.19

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
	Based on Median	.441	3	8	.730
	Based on Median and with adjusted df	.441	3	3.430	.738
	Based on trimmed mean	2.471	3	8	.136
F1	Based on Mean	. ^a			
F2	Based on Mean	. ^a			
F3	Based on Mean	. ^a			
F4	Based on Mean	. ^a			

a. Levene's Test of Equality of Error Variances is not computed because there are less than two nonempty groups.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
	Within Groups	.011	8	.001		
	Total	1.956	11			

3. Uji daya sebar lotion ekstrak etanol buah *blackberry*

Tests of Normality

	uji_dayasebar	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
uji_dayasebar_lotion	1	.253	3	.	.964	3	.637
	2	.253	3	.	.964	3	.637
	3	.253	3	.	.964	3	.637
	4	.175	3	.	1.000	3	1.000
	5	.253	3	.	.964	3	.637
	6	.253	3	.	.964	3	.637
	7	.175	3	.	1.000	3	1.000
	8	.292	3	.	.923	3	.463
	9	.175	3	.	1.000	3	1.000
	10	.276	3	.	.942	3	.537
	11	.219	3	.	.987	3	.780
	12	.232	3	.	.980	3	.726
	13	.219	3	.	.987	3	.780
	14	.219	3	.	.987	3	.780
	15	.253	3	.	.964	3	.637
	16	.292	3	.	.923	3	.463

a. Lilliefors Significance Correction

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
uji_dayasebar_lotion	1	3	6.640	.0458	.0265	6.526	6.754	6.6	6.7
	2	3	6.533	.1528	.0882	6.154	6.913	6.4	6.7
	3	3	7.167	.1528	.0882	6.787	7.546	7.0	7.3
	4	3	7.400	.2000	.1155	6.903	7.897	7.2	7.6
	5	3	5.833	.1528	.0882	5.454	6.213	5.7	6.0
	6	3	6.233	.1528	.0882	5.854	6.613	6.1	6.4
	7	3	6.500	.2000	.1155	6.003	6.997	6.3	6.7
	8	3	6.867	.2082	.1202	6.350	7.384	6.7	7.1
	9	3	5.300	.1000	.0577	5.052	5.548	5.2	5.4
	10	3	5.600	.3606	.2082	4.704	6.496	5.2	5.9
	11	3	6.067	.2517	.1453	5.442	6.692	5.8	6.3
	12	3	6.233	.4041	.2333	5.229	7.237	5.8	6.6
	13	3	4.933	.2517	.1453	4.308	5.558	4.7	5.2
	14	3	5.233	.2517	.1453	4.608	5.858	5.0	5.5
	15	3	5.633	.3055	.1764	4.874	6.392	5.3	5.9
	16	3	6.033	.2082	.1202	5.516	6.550	5.8	6.2
Total	48	6.138	.7115	.1027	5.931	6.345	4.7	7.6	

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
uji_dayasebar lotion	Based on Mean	1.125	15	32	.375
	Based on Median	.493	15	32	.927
	Based on Median and with adjusted df	.493	15	19.140	.916
	Based on trimmed mean	1.075	15	32	.414
F1_beban0	Based on Mean	. ^a			
F1_beban50	Based on Mean	. ^a			
F1_beban100	Based on Mean	. ^a			
F1_beban150	Based on Mean	. ^a			
F2_beban0	Based on Mean	. ^a			
F2_beban50	Based on Mean	. ^a			
F2_beban100	Based on Mean	. ^a			
F2_beban150	Based on Mean	. ^a			
F3_beban0	Based on Mean	. ^a			
F3_beban50	Based on Mean	. ^a			
F3_beban100	Based on Mean	. ^a			
F3_beban150	Based on Mean	. ^a			
F4_beban0	Based on Mean	. ^a			
F4_beban50	Based on Mean	. ^a			
F4_beban100	Based on Mean	. ^a			
F4_beban150	Based on Mean	. ^a			

a. Levene's Test of Equality of Error Variances is not computed because there are less than two nonempty groups.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
uji_dayasebar_lotion	Between Groups	22.092	15	1.473	27.764	.000
	Within Groups	1.698	32	.053		
	Total	23.790	47			

4. Uji viskositas lotion ekstrak etanol buah blackberry

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
uji_viskositaslotion	12	6625.00	3331.155	2500	11000
F1	3	2500.00	.000	2500	2500
F2	3	5000.00	.000	5000	5000
F3	3	8000.00	.000	8000	8000
F4	3	11000.00	.000	11000	11000

One-Sample Kolmogorov-Smirnov Test

		uji_viskositas lotion	F1	F2	F3	F4
N		12	3	3	3	3
Normal Parameters ^{a,b}	Mean	6625.00	2500.00	5000.00	8000.00	11000.00
	Std. Deviation	3331.155	.000 ^e	.000 ^e	.000 ^e	.000 ^e
Most Extreme Differences	Absolute	.187				
	Positive	.187				
	Negative	-.160				
Test Statistic		.187				
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.

e. The distribution has no variance for this variable. One-Sample Kolmogorov-Smirnov Test cannot be performed.

Test Statistics^a

	uji_viskositas lotion
Mann-Whitney U	.000
Wilcoxon W	6.000
Z	-2.236
Asymp. Sig. (2-tailed)	.025
Exact Sig. [2*(1-tailed Sig.)]	.100 ^b

a. Grouping Variable: uji_viskositas

b. Not corrected for ties.

Lampiran 18. Uji statistik mutu fisik lotion setelah stabilitas

1. Uji pH lotion

Tests of Normality

uji_pHstabilitaslotion	uji_pHstabilitas	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
	1	.219	3	.	.987	3	.780
	2	.385	3	.	.750	3	.000
	3	.219	3	.	.987	3	.780
	4	.219	3	.	.987	3	.780
	5	.232	3	.	.980	3	.726
	6	.276	3	.	.942	3	.537
	7	.301	3	.	.912	3	.424
	8	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

One-Sample Kolmogorov-Smirnov Test

	uji_pHstabilitaslotion	uji_pHstabilitaslotion	F1_sebelum	F1_sesudah	F2_sebelum	F2_sesudah	F3_sebelum	F3_sesudah	F4_sebelum	F4_sesudah	
N	24	24	3	3	3	3	3	3	3	3	
Normal Parameters ^{a,b}	Mean	4.50	4.6942	7.1533	7.1833	6.7633	6.4633	6.6267	6.5300	6.5133	6.4033
	Std. Deviation	2.941	2.7830	.02517	.02389	.02517	.02517	.04041	.03606	.09807	.01000
Most Extreme Differences	Absolute	.114	.188	.219	.385	.219	.219	.232	.276	.381	.175
	Positive	.114	.188	.219	.385	.219	.219	.232	.203	.381	.175
	Negative	-.114	-.173	-.189	-.282	-.189	-.192	-.192	-.276	-.217	-.175
Test Statistic	.114	.188	.219	.385	.219	.219	.232	.276	.381	.175	
Asymp. Sig. (2-tailed)	.201 ^{c,d}	.027 ^e	.00	.00	.00	.00	.00	.00	.00	.00	

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

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

e. Significance can not be computed because sum of case weights is less than 5.

Test Statistics^a

	F1_sesudah - F1_sebelum	F2_sesudah - F2_sebelum	F3_sesudah - F3_sebelum	F4_sesudah - F4_sebelum
Z	-1.604 ^b	-1.732 ^b	-1.604 ^b	-1.604 ^b
Asymp. Sig. (2-tailed)	.109	.083	.109	.109

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

2. Uji daya lekat lotion

Tests of Normality

	uji_dayalekatstabilitas	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
uji_dayalekatlotionstabilitas	1	.253	3	.	.964	3	.637
	2	.175	3	.	1.000	3	1.000
	3	.292	3	.	.923	3	.463
	4	.253	3	.	.964	3	.637
	5	.175	3	.	1.000	3	1.000
	6	.175	3	.	1.000	3	1.000
	7	.314	3	.	.893	3	.363
	8	.253	3	.	.964	3	.637

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
uji_dayalekatlotionstabilitas	Based on Mean	1.181	7	16	.366
	Based on Median	.360	7	16	.912
	Based on Median and with adjusted df	.360	7	9.729	.905
	Based on trimmed mean	1.107	7	16	.405
F1_sebelum	Based on Mean	. ^a			
F1_sesudah	Based on Mean	. ^a			
F2_sebelum	Based on Mean	. ^a			
F2_sesudah	Based on Mean	. ^a			
F3_sebelum	Based on Mean	. ^a			
F3_sesudah	Based on Mean	. ^a			
F4_sebelum	Based on Mean	. ^a			
F4_sesudah	Based on Mean	. ^a			

a. Levene's Test of Equality of Error Variances is not computed because there are less than two nonempty groups.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
uji_dayalekatlotionstabilitas	Between Groups	4.588	7	.655	1673.502	.000
	Within Groups	.006	16	.000		
	Total	4.594	23			

Paired Samples Test

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	F1_sebelum-F1_sesudah	.10333	.01528	.00882	.06539	.14128	11.717	2	.007
Pair 2	F2_sebelum-F2_sesudah	.06667	.00577	.00333	.05232	.08101	20.000	2	.002
Pair 3	F3_sebelum-F3_sesudah	.02000	.01000	.00577	-.00484	.04484	3.464	2	.074
Pair 4	F4_sebelum-F4_sesudah	.02333	.01528	.00882	-.01461	.06128	2.646	2	.118

3. Uji daya sebar F1

Tests of Normality

uji_dayasebar_stabilitas		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
uji_dayasebarlotion	1	.175	3	.	1.000	3	1.000
	2	.253	3	.	.964	3	.637
	3	.253	3	.	.964	3	.637
	4	.175	3	.	1.000	3	1.000
	5	.253	3	.	.964	3	.637
	6	.253	3	.	.964	3	.637
	7	.175	3	.	1.000	3	1.000
	8	.253	3	.	.964	3	.637

a. Lilliefors Significance Correction

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
uji_dayasebarlotion	Between Groups	5.765	7	.824	31.880	.000
	Within Groups	.413	16	.026		
	Total	6.178	23			

Paired Samples Test

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	F1_sebelumbeban0 - F1_sudahbeban0	-.4667	.0577	.0333	-.6101	-.3232	-14.000	2	.005
Pair 2	F1_sebelumbeban50 - F1_sudahbeban50	-.2667	.1155	.0667	-.5535	.0202	-4.000	2	.057
Pair 3	F1_sebelumbeban100 - F1_sudahbeban100	-.2667	.0577	.0333	-.4101	-.1232	-8.000	2	.015
Pair 4	F1_sebelumbeban150 - F1_sudahbeban150	-.3333	.1528	.0882	-.7128	.0461	-3.780	2	.063

4. Uji stabilitas daya sebar F2

Tests of Normality

uji_dayasebar_stabilitas		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
uji_dayasebarlotion	1	.253	3	.	.964	3	.637
	2	.253	3	.	.964	3	.637
	3	.175	3	.	1.000	3	1.000
	4	.253	3	.	.964	3	.637
	5	.253	3	.	.964	3	.637
	6	.292	3	.	.923	3	.463
	7	.253	3	.	.964	3	.637
	8	.253	3	.	.964	3	.637

a. Lilliefors Significance Correction

ANOVA

uji_dayasebarlotion		Sum of	df	Mean Square	F	Sig.
		Squares				
uji_dayasebarlotion	Between Groups	5.267	7	.752	31.133	.000
	Within Groups	.387	16	.024		
	Total	5.653	23			

Paired Samples Test

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
					Paired Differences				
Pair 1	F2_sebelumbeban0 - F2_sudahbeban0	-.4333	.1528	.0882	-.8128	-.0539	-4.914	2	.039
Pair 2	F2_sebelumbeban50 - F2_sudahbeban50	-.6667	.2082	.1202	-1.1838	-.1496	-5.547	2	.031
Pair 3	F2_sebelumbeban100 - F2_sudahbeban100	-.4667	.3512	.2028	-1.3391	.4057	-2.302	2	.148
Pair 4	F2_sebelumbeban150 - F2_sudahbeban150	-.7000	.1000	.0577	-.9484	-.4516	-12.124	2	.007

5. Uji daya sebar F3

Tests of Normality

uji_dayasebar_stabilitas		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
uji_dayasebarlotion	1	.175	3	.	1.000	3	1.000
	2	.175	3	.	1.000	3	1.000
	3	.276	3	.	.942	3	.537
	4	.292	3	.	.923	3	.463
	5	.253	3	.	.964	3	.637
	6	.175	3	.	1.000	3	1.000
	7	.385	3	.	.750	3	.000
	8	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

ANOVA

uji_dayasebarlotion		Sum of Squares		df	Mean Square	F	Sig.
uji_dayasebarlotion	Between Groups	6.418	7	.917	18.808	.000	
	Within Groups	.780	16	.049			
	Total	7.198	23				

Paired Samples Test

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 2	F3_sebelumbeban50 - F3_sesudahbeban50	-.4667	.2082	.1202	-.9838	.0504	-3.883	2	.060
Pair 3	F3_sebelumbeban100 - F3_sesudahbeban100	-.4667	.2309	.1333	-1.0404	.1070	-3.500	2	.073
Pair 4	F3_sebelumbeban150 - F3_sesudahbeban150	-.7667	.3786	.2186	-1.7071	.1738	-3.507	2	.073

6. Uji daya sebar F4

Tests of Normality

uji_dayasebar_stabilitas		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
uji_dayasebarlotion	1	.219	3	.	.987	3	.780
	2	.385	3	.	.750	3	.000
	3	.292	3	.	.923	3	.463
	4	.253	3	.	.964	3	.637
	5	.253	3	.	.964	3	.637
	6	.204	3	.	.993	3	.843
	7	.314	3	.	.893	3	.363
	8	.253	3	.	.964	3	.637

a. Lilliefors Significance Correction

One-Sample Kolmogorov-Smirnov Test

		F3_sebelum eban	F3_sebelum eban0	F3_sesudah eban0	F3_sebelum eban50	F3_sesudah eban50	F3_sebelum eban100	F3_sesudah eban100	F3_sebelum eban150	F3_sesudah eban150
N		24	3	3	3	3	3	3	3	3
Normal Parameters ^{a,b}	Mean	5.833	4.933	5.233	5.267	5.667	5.833	6.667	6.000	6.267
	Std. Deviation	6105	2517	1155	2082	1526	3855	3812	2640	3055
Most Extreme Differences	Positive	.118	.219	.395	.292	.253	.253	.204	.314	.253
	Negative	-.118	-.219	-.282	-.292	-.186	-.186	-.185	-.225	-.253
	Test Statistic	-.111	-.189	-.395	-.212	-.253	-.253	-.204	-.314	-.198
Asymp. Sig. (2-tailed)		.202 ^c	**.d	**.d	**.d	**.d	**.d	**.d	**.d	**.d

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

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

e. Significance can not be computed because sum of case weights is less than 5.

Test Statistics^a

	F3_sesudahb eban0 - F3_sebelum eban0	F3_sesudahb eban50 - F3_sebelum eban50	F3_sesudahb eban100 - F3_sebelum eban100	F3_sesudahb eban150 - F3_sebelum eban150
Z	-1.633 ^b	-1.633 ^b	-1.633 ^b	-1.604 ^b
Asymp. Sig. (2-tailed)	.102	.102	.102	.109

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

7. Uji viskositas lotion

Tests of Normality^{b,c,d,e,f,g,h,j}

uji_viskositasstabilitas		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
uji_viskositaslotionstabilitas	1	.	3	.	.	3	.
F1_sebelum	1	.	3	.	.	3	.
F1_sesudah	1	.187	3	.	.998	3	.915
F2_sebelum	1	.	3	.	.	3	.
F2_sesudah	1	.385	3	.	.750	3	.000
F3_sebelum	1	.	3	.	.	3	.
F3_sesudah	1	.	3	.	.	3	.
F4_sebelum	1	.	3	.	.	3	.
F4_sesudah	1	.	3	.	.	3	.

a. Lilliefors Significance Correction

One-Sample Kolmogorov-Smirnov Test

		uji_viskositasstabilitas	F1_sebelum	F1_sesudah	F2_sebelum	F2_sesudah	F3_sebelum	F3_sesudah	F4_sebelum	F4_sesudah
N		24	24	3	3	3	3	3	3	3
Normal Parameters ^{a,b}	Mean	4.50	6937.50	5850.00	1500.00	-888.00	4333.33	8888.00	8000.00	11000.00
	Std. Deviation	2.341	3008.367	.000 ^c	500.000	.000 ^c	577.350	.000 ^c	.000 ^c	.000 ^c
Most Extreme Difference	Absolute	.114	.240		.175		.385			
	Positive	.114	.240		.175		.385			
	Negative	-.114	-.178		-.175		-.282			
Test Statistic		.114	.240		.175		.385			
Asymp. Sig. (2-tailed)		.209 ^{d,e}	.001 ^f		.07		.07			

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

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

e. The distribution has no variance for this variable. One-Sample Kolmogorov-Smirnov Test cannot be performed.

f. Significance cannot be computed because sum of case weights is less than 5.

Test Statistics^a

	F1_sesudah - F1_sebelum	F2_sesudah - F2_sebelum	F3_sesudah - F3_sebelum	F4_sesudah - F4_sebelum
Z	-1.604 ^b	-1.414 ^b	.000 ^c	.000 ^c
Asymp. Sig. (2-tailed)	.109	.157	1.000	1.000

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

c. The sum of negative ranks equals the sum of positive ranks.

Lampiran 19. Uji staitistik aktivitas antioksidan lotion

Tests of Normality^{b,c,d,e,f,g}

	perlakuan	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
replikasi	F1_kontrolnegatif	.294	3	.	.920	3	.454
F1_kontrolnegatif	F1_kontrolnegatif	.294	3	.	.920	3	.454
F2_lotion2	F1_kontrolnegatif	.211	3	.	.991	3	.817
F3_lotion3	F1_kontrolnegatif	.238	3	.	.976	3	.702
F4_lotion4	F1_kontrolnegatif	.276	3	.	.942	3	.537
Ekstrak_100mg	F1_kontrolnegatif	.275	3	.	.944	3	.542

a. Lilliefors Significance Correction

Descriptives

replikasi

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
F1_kontrolnegatif	3	1369.5500	56.94063	32.87469	1228.1016	1510.9984	1324.19	1433.45
F2_lotion2	3	117.0800	.72333	.41761	115.2832	118.8768	116.32	117.76
F3_lotion3	3	96.2333	1.71074	.98770	91.9836	100.4830	94.39	97.77
F4_lotion4	3	79.0200	.68505	.39552	77.3182	80.7218	78.45	79.78
Ekstrak_100mg	3	35.0333	.60740	.35068	33.5245	36.5422	34.36	35.54
Total	15	339.3833	534.32863	137.96306	43.4820	635.2847	34.36	1433.45

ANOVA

replikasi

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3990606.130	4	997651.533	1536.492	.000
Within Groups	6493.047	10	649.305		
Total	3997099.178	14			