LAMPIRAN

Lampiran 1. Permohonan izin praktikum

PERMOHONAN IJIN PRAKTEK PENELITIAN DI LABORATORIUM

Hal : Ijin Penelitian di Laboratorium

Surakarta, 5 Februari 2021

Kepada,

Yth. Kepala UPT Laboratorium
Universitas Setia Budi

Di tempat

Dengan hormat,

Saya, yang bertanda tangan di bawah ini mengajukan ijin untuk penelitian di laboratorium :

Nama, nomor Wa	: Erlinda Novita Sari, 0895422584333
NIM / Progdi	: 23175287A/ SI Farmasi
Judul Penelitian	: Pengaruh Variasi Konsentrasi HPMC Terhadap Mutu Fisik dan Aktivitas Antioksidan Emulgel Ekstrak Etanol 70 % Buah Mengkudu (*Morinda citrifolia* L.)
Nomor Laboratorium yang digunakan	: 1 / 2 / 3 /4 / 5 / 6/ 7 & 8/ 9/ 10/ 11/ 12/ 13/ 14/ 15/ 16
Laboratorium yang dituju pertama	: 9
Laboratorium yang dituju kedua	: 13
Laboratorium yang dituju ketiga	: 1

Demikian surat permohonan izin ini dibuat. Atas perhatian dan kerjasama yang baik, Saya ucapkan terima kasih.

Dosen Pembimbing 1	Dosen Pembimbing 2	Mahasiswa
(apt. Siti Aisiyah, M.Sc.)	(apt. Fitri Kurniasari, M.Farm.)	(Erlinda Novita Sari)

Mengetahui,

Progdi

(Dr. apt. Wiwin Herdwiani, M.Sc.)

Lampiran 2. Surat izin praktik di laboratorium Universitas Setia Budi

UNIVERSITAS SETIA BUDI

UPT- LABORATORIUM

Nomor : 134/UPT-lab/19.03.2021
Lamp. : -
Hal : Ijin Penelitian di Laboratorium

Kepada Yth. Bapak,Ibu Laboran dan PU

Di Tempat

Dengan hormat,

Sehubungan dengan penyelesaian penelitian mahasiswa, maka kami UPT laboratorium menyetujui untuk praktikum kepada :

Nama/NIM	: Erlinda Novita Sari./ 23175287A
Fakultas	: Farmasi
Nomor Lab	: 9,13,1
Masa Berlaku	: 14 (Empat Belas) hari kerja

Atas perhatian dan kerjasamanya, kami ucapkan terimakasih.

Catatan : Membawa bukti transfer yang sudah difotokopi dan diperbesar sebanyak 4 lembar dan Selama praktikum mahasiswa yang bersangkutan harus memakai APD lengkap (jas praktek, masker, face shield/ kaca mata lebar, sepatu)

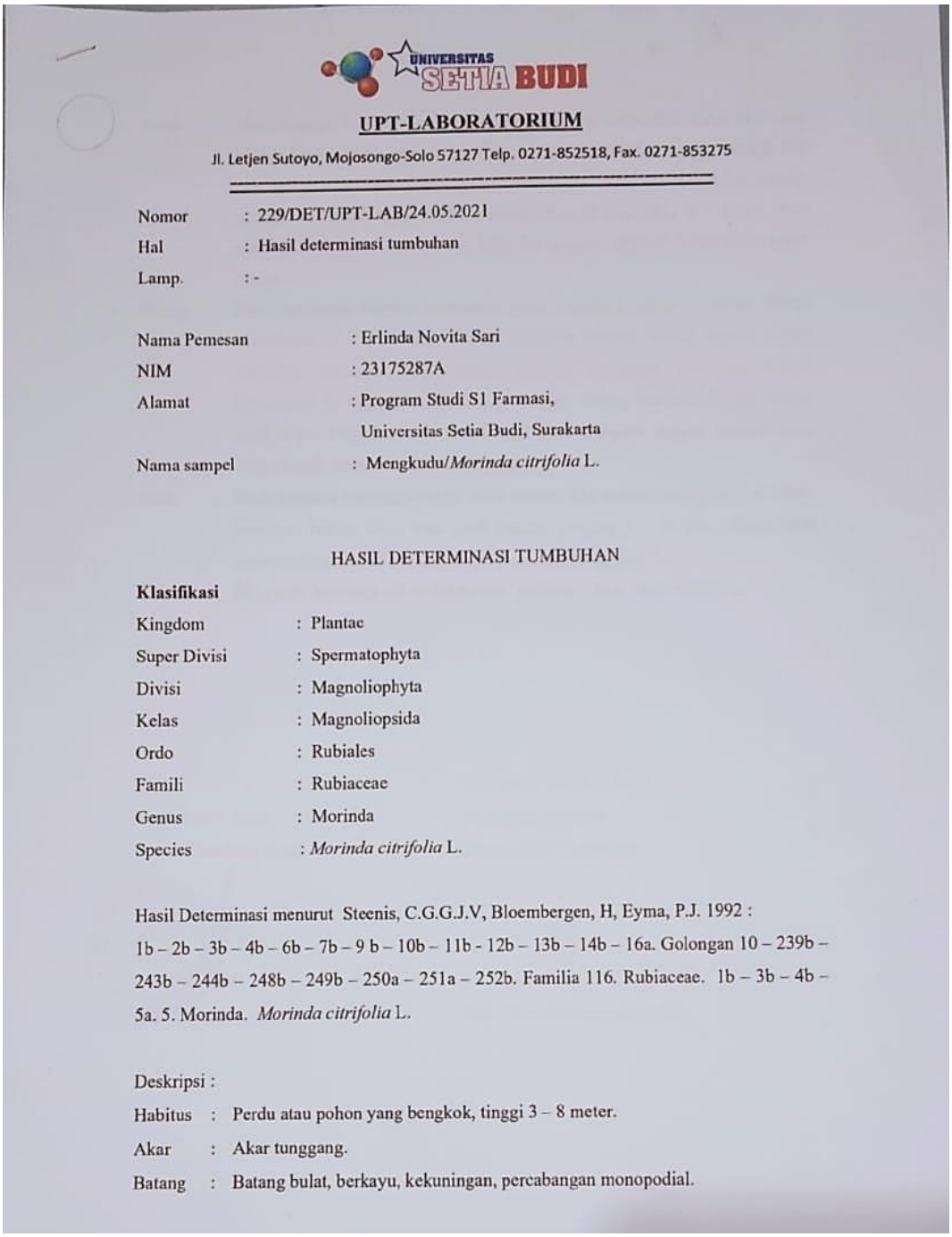
.

Surakarta, 19 Maret 2021
Ka UPT Laboratorium

Asik Gunawan

Jl.Let Jend Sutoyo, Mojosongo,Solo 57127, Telp.0271-852518, fax 0271 – 853275
Home page : www.setiabudi.ac.id, e-mail : info @setiabudi.ac.id

Lampiran 3. Hasil determinasi tanaman mengkudu



UNIVERSITAS SETIA BUDI

UPT-LABORATORIUM

Jl. Letjen Sutoyo, Mojosongo-Solo 57127 Telp. 0271-852518, Fax. 0271-853275

Nomor : 229/DET/UPT-LAB/24.05.2021
Hal : Hasil determinasi tumbuhan
Lamp. : -

Nama Pemesan : Erlinda Novita Sari
NIM : 23175287A
Alamat : Program Studi S1 Farmasi,
Universitas Setia Budi, Surakarta
Nama sampel : Mengkudu/*Morinda citrifolia* L.

HASIL DETERMINASI TUMBUHAN

Klasifikasi

Kingdom : Plantae
Super Divisi : Spermatophyta
Divisi : Magnoliophyta
Kelas : Magnoliopsida
Ordo : Rubiales
Famili : Rubiaceae
Genus : Morinda
Species : *Morinda citrifolia* L.

Hasil Determinasi menurut Steenis, C.G.G.J.V, Bloembergen, H, Eyma, P.J. 1992 : 1b – 2b – 3b – 4b – 6b – 7b – 9 b – 10b – 11b - 12b – 13b – 14b – 16a. Golongan 10 – 239b – 243b – 244b – 248b – 249b – 250a – 251a – 252b. Familia 116. Rubiaceae. 1b – 3b – 4b – 5a. 5. Morinda. *Morinda citrifolia* L.

Deskripsi :

Habitus : Perdu atau pohon yang bengkok, tinggi 3 – 8 meter.
Akar : Akar tunggang.
Batang : Batang bulat, berkayu, kekuningan, percabangan monopodial.

Daun : Daun tunggal, bentuk elips, berhadapan bersilang, bertangkai, bulat telur lebar hingga bentuk elips, pangkal runcing, kebanyakan dengan ujung runcing, tepi rata, pertulangan daun menyirip, permukaan atas hijau tua mengkilat, gundul, permukaan bawah hijau muda, panjang 18 – 28 cm, lebar 6 – 8 cm. Daun penumpu bulat telur, bertepi rata, hijau kekuningan, terdapat di bawah karangan bunga.

Bunga : Bunga majemuk bongkol bertangkai, rapat, berbunga banyak, di ketiak. Bunga berbilangan 5 – 6, berbau harum. Mahkota bentuk tabung seperti bentuk terompet, berwarna putih, dalam lehernya berambut wol, taju sempit. Benangsari 5, tumbuh menjadi satu dengan tabung mahkota hingga tinggi, tangkai sari berambut wol. Bakal buah pada ujungnya dengan kelopak yang tetap tinggal, berwarna hijau kekuningan.

Buah : Buah bongkol berbenjol-benjol tidak teratur, jika masak berdaging dan berair, berwarna kuning kotor atau putih kuning, panjang 5 – 10 cm, intinya keras seperti tulang, coklat merah, bentuk memanjang segitiga.

Biji : Biji pipih, berwarna coklat kehitaman, panjang ± 1cm, lebar ± 0,5 cm.

Surakarta, 24 Mei 2021

Kepala UPT-LAB
Universitas Setia Budi

Penanggung jawab
Determinasi Tumbuhan

UNIVERSITAS SETIA BUDI
UPT LABORATORIUM

Asik Gunawan, Amdk

Dra. Dewi Sulistyawati. M.Sc.

Lampiran 4. Proses pembuatan ekstrak buah mengkudu

Proses pembuatan ekstrak etanol 70 % buah mengkudu (*Morinda citrifolia* L.) melalui beberapa tahapan penting, yaitu dari sortasi basah, pencucian, perajangan, pengeringan, penyerbukan, ekstraksi, dan pemekakan, berikut proses pembuatan ekstrak:


Tanaman mengkudu


Buah mengkudu


Sortasi basah


Pencucian simplisia


Pengeringan


Perajangan


Hasil rajangan


Pengeringan


Hasil pengeringan


Penyerbukan


Pengayakan dengan mesh nomor 40


Penimbangan

Maserasi

Penyaringan dengan flannel

Penyaringan dengan kertas saring

Filtrat

Pemekatan

Ekstrak kental

Lampiran 5. Perhitungan rendemen simplisia buah mengkudu

Simplisia buah mengkudu yang digunakan yaitu 3,5 kg, setelah dilakukan sortasi basah (buah mengkudu matang yang layak untuk penelitian dipisahkan dengan yang tidak layak) diperoleh bobot 2,75 kg. Pada proses pengeringan diperoleh bobot kering yaitu 1,20 kg. Rendemen yang diperoleh yaitu:

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

$$= \frac{1.200\ \text{(g)}}{2.750\ \text{(g)}} \times 100\ \%$$

$$= 43{,}63\ \%$$

Lampiran 6. Perhitungan rendemen serbuk buah mengkudu

Serbuk buah mengkudu diperoleh dari buah mengkudu kering dengan bobot 1,20 kg, kemudian dihaluskan dengan penggilingan, diperoleh berat serbuk yaitu 1 kg, kemudian diayak dengan mesh nomor 40 diperoleh bobot serbuk yaitu 800 g. Rendemen yang diperoleh yaitu:

% Rendemen serbuk buah mengkudu $= \frac{\text{Bobot serbuk (g)}}{\text{Bobot kering (g)}} \times 100\%$

$= \frac{800\ (g)}{1.200\ (g)} \times 100\%$

$= 66{,}67\ \%$

Lampiran 7. Penetapan susut pengeringan serbuk

Moisture balance

Penimbangan serbuk

Hasil uji I

Hasil uji II

Hasil uji III

Lampiran 8. Perhitungan rendemen ekstrak etanol 70 % buah mengkudu

Ekstrak buah mengkudu diperoleh dari serbuk buah mengkudu yang telah diayak dengan mesh nomor 40 kering dengan bobot 800 g, kemudian ditimbang 750 gram, dan dilakukan proses maserasi dengan pelarut etanol 70 % (perbandingan 1:10 dan diulang minimal 1 kali dengan perbandingan 1:5), filtrat hasil ekstraksi kemudian dipekatkan dengan *rotary evaporator*.

1. Bobot gelas kosong 1 + tutup (A) = 152,917 g + 9,665 g
   = 162,58 g
   Bobot gelas kosong 1+ekstrak (B) = 236 g
   Bobot ekstrak 1 = [(B) – (A)]
   = [(236 g)-(162,58 g)]
   = 73,42 g
2. Berat gelas kosong 2 (A) = 142 g

Bobot gelas kosong 2+ekstrak (B) = 151,860 g

Bobot ekstrak 2 = [(B) – (A)]

= [(151,860 g)-(142 g)]

= 9,86 g

3. % Rendemen ekstrak etanol 70 % buah mengkudu

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

$$= \frac{83{,}28\ (g)}{750\ (g)} \times 100\%$$

= 11,104 %

Bobot gelas kosong 1

Bobot gelas kosong 1+ekstrak

Bobot tutup 1

Bobot gelas kosong 2

Bobot gelas kosong 2+ekstrak

Bobot tutup 2

Lampiran 9. Penetapan kadar air ekstrak

Ekstrak kental etanol 70 % buah mengkudu yang digunakan yaitu 10 g, penetapan kadar air ekstrak dilakukan dengan menggunakan alat oven selama 5, 3, 3 jam, hingga perbedaan antara dua penimbangan berturut-turut tidak lebih dari 0,25 % (Kemenkes RI, 2017). Pengujian dilakukan sebanyak 3 kali replikasi. Kadar air ekstrak yang diperoleh yaitu:

Hasil penetapan kadar air ekstrak

Uji kadar air ekstrak	Bobot awal	Bobot akhir	Selisih bobot	Kadar air (% b/v)
Replikasi I	10,649	9,695	0,954	8,958
Replikasi II	10,460	9,497	0,963	9,206
Replikasi III	10,287	9,324	0,963	9,361
Rata-rata ± SD				9,175473 ± 0,203

Rumus uji kadar air simplia sebagai berikut:

$$= \frac{\text{Bobot awal (g)} - \text{Bobot akhir (g)}}{\text{Bobot awal (g)}} \times 100\%$$

Replikasi I

Cawan kosong = 49,134 g

Cawan kosong+simplisia sebelum dioven = 59,783g

Berat sampel sebelum dioven = 10,649 g

Simplisia setelah dioven = 9,695g

Kadar air $= \frac{10{,}649\ \text{g} - 9{,}695\ \text{g}}{10{,}649\ \text{g}} \times 100\%$

$= \frac{0{,}954\ \text{g}}{10{,}648\ \text{g}} \times 100\%$

= 8,958 % b/v

Replikasi II

Cawan kosong = 49,152 g

Cawan kosong+simplisia sebelum dioven = 59,612 g

Berat sampel sebelum dioven = 10,460 g

Simplisia setelah dioven = 9,497 g

Kadar air $= \frac{10{,}287\ \text{g} - 9{,}324\ \text{g}}{10{,}460\ \text{g}} \times 100\%$

$= \frac{0{,}963\ \text{g}}{10{,}460\ \text{g}} \times 100\%$

= 9,206 % b/v

Replikasi III

Cawan kosong = 49,141 g

Cawan kosong+simplisia sebelum dioven = 59,783g

Berat sampel sebelum dioven = 10,649 g

Simplisia setelah dioven = 9,695g

Kadar air $= \frac{10{,}649\ \text{g} - 9{,}695\ \text{g}}{10{,}649\ \text{g}} \times 100\%$

$$= \frac{0{,}954\ \text{g}}{10{,}649\ \text{g}} \times 100\%$$

$$= 9{,}361\ \%\ \text{b/v}$$

Penimbangan awal

Penimbangan setelah proses pemanasan

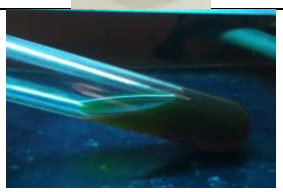
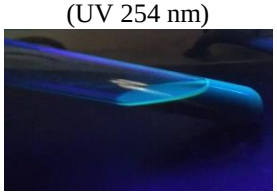

Proses pemanasan dengan oven


Mengatur suhu oven 105 ºC


Proses pendinginan dengan desikator

Lampiran 10. Uji identifikasi senyawa kimia ekstrak etanol 70 % buah mengkudu

Uji identifikasi	Reagen	Gambar	Keterangan	Perubahan
Uji alkaloid	Dragendorff		(+)	Endapan merah tua
	Mayer		(+)	Endapan putih kekuningan

	Bouchardat		(+)	Endapan coklat tua
Uji tannin	Ekstrak + akuades panas + pereaksi $FeCl_3$		(+)	Hijau tua
Uji kumarin	Larutan ammonia 10 %	 (UV 254 nm)	(+)	Fluoresensi hijau tua
		 (UV 366 nm)	(+)	Fluoresensi hijau kebiruan
Uji flavonoid	Ekstrak + aquadest + serbuk Mg + alkohol dan HCL+ amil alkohol		(+)	Terbentuk warna jingga pada lapisan amil alkohol
Polifenol	Ekstrak + akuades panas + pereaksi $FeCl_3$		(+)	Warna biru kehijauan

Lampiran 11. Perhitungan formula emulgel

1. Penimbangan formula I emulgel ekstrak etanol 70 % buah mengkudu

Formula I	Komposisi (%)	Perhitungan	Penimbangan (g)
Ekstrak etanol 70 % buah mengkudu	10	$= \frac{10}{100}$ x 100g	10
HPMC	3,5	$= \frac{3,5}{100}$ x 100g	3,5
PEG	10	$= \frac{10}{100}$ x 100g	10
Metil paraben	0,2	$= \frac{0,2}{100}$ x 100g	0,2
Propil paraben	0,1	$= \frac{0,1}{100}$ x 100g	0,1

Oleum menthae piperitae	0,05	$= \frac{0,05}{100}$ x 100g	0,05
Paraffin cair	7,5	$= \frac{7,5}{100}$ x 100g	7,5
Tween 80	3,12	$= \frac{3,12}{100}$ x 100g	3,12
Span 80	5,88	$= \frac{5,88}{100}$ x 100g	5,88
Akuades	Ad 100	= 100 g - (10 + 3,5 + 10 + 0,2 + 0,1 + 0,05 + 7,5 + 3,1 2+ 5,88) g = 100 g – 40,35 g	59,65

2. Penimbangan formula II emulgel ekstrak etanol 70 % buah mengkudu

Formula II	Komposisi (%)	Perhitungan	Penimbangan (g)
Ekstrak etanol 70 % buah mengkudu	10	$= \frac{10}{100}$ x 100g	10
HPMC	4,5	$= \frac{4,5}{100}$ x 100g	4,5
PEG	10	$= \frac{10}{100}$ x 100g	10
Metil paraben	0,2	$= \frac{0,2}{100}$ x 100g	0,2
Propil paraben	0,1	$= \frac{0,1}{100}$ x 100g	0,1
Oleum menthae piperitae	0,05	$= \frac{0,05}{100}$ x 100g	0,05
Paraffin cair	7,5	$= \frac{7,5}{100}$ x 100g	7,5
Tween 80	3,12	$= \frac{3,12}{100}$ x 100g	3,12
Span 80	5,88	$= \frac{5,88}{100}$ x 100g	5,88
Akuades	Ad 100	= 100 g - (10 + 4,5 +10 + 0,2 + 0,1+ 0,05 + 7,5 + 3,12 + 5,88) g = 100 g – 41,35 g	58,65

3. Penimbangan formula III emulgel ekstrak etanol 70 % buah mengkudu

Formula III	Komposisi (%)	Perhitungan	Penimbangan (g)
Ekstrak etanol 70 % buah mengkudu	10	$= \frac{10}{100}$ x 100g	10
HPMC	5,5	$= \frac{5,5}{100}$ x 100g	5,5
PEG	10	$= \frac{10}{100}$ x 100g	10
Metil paraben	0,2	$= \frac{0,2}{100}$ x 100g	0,2
Propil paraben	0,1	$= \frac{0,1}{100}$ x 100g	0,1
Oleum menthae piperitae	0,05	$= \frac{0,05}{100}$ x 100g	0,05
Paraffin cair	7,5	$= \frac{7,5}{100}$ x 100g	7,5

Tween 80	3,12	$= \frac{3,12}{100}$ x 100g	3,12
Span 80	5,88	$= \frac{5,88}{100}$ x 100g	5,88
Akuades	Ad 100	= 100 g - (10 + 5,5 + 10 + 0,2 + 0,1 + 0,05 + 7,5 + 3,12 + 5,88) g = 100 g – 42,35 g	57,65

4. Penimbangan emulgel kontrol negatif I

Formula I	Komposisi (%)	Perhitungan	Penimbangan (g)
Zat aktif	0	$= \frac{0}{100}$ x 100g	0
HPMC	3,5	$= \frac{3,5}{100}$ x 100g	3,5
PEG	10	$= \frac{10}{100}$ x 100g	10
Metil paraben	0,2	$= \frac{0,2}{100}$ x 100g	0,2
Propil paraben	0,1	$= \frac{0,1}{100}$ x 100g	0,1
Oleum menthae piperitae	0,05	$= \frac{0,05}{100}$ x 100g	0,05
Paraffin cair	7,5	$= \frac{7,5}{100}$ x 100g	7,5
Tween 80	3,12	$= \frac{3,12}{100}$ x 100g	3,12
Span 80	5,88	$= \frac{5,88}{100}$ x 100g	5,88
Akuades	Ad 100	= 100 g - (0 + 3,5+ 10 + 0,2 + 0,1 + 0,05 + 7,5 + 3,12 + 5,88) g = 100 g – 30,35 g	69,65

5. Penimbangan emulgel kontrol negatif II

Formula II	Komposisi (%)	Perhitungan	Penimbangan (g)
Zat aktif	0	$= \frac{0}{100}$ x 100g	0
HPMC	4,5	$= \frac{4,5}{100}$ x 100g	4,5
PEG	10	$= \frac{10}{100}$ x 100g	10
Metil paraben	0,2	$= \frac{0,2}{100}$ x 100g	0,2
Propil paraben	0,1	$= \frac{0,1}{100}$ x 100g	0,1
Oleum menthae piperitae	0,05	$= \frac{0,05}{100}$ x 100g	0,05
Paraffin cair	7,5	$= \frac{7,5}{100}$ x 100g	7,5
Tween 80	3,12	$= \frac{3,12}{100}$ x 100g	3,12
Span 80	5,88	$= \frac{5,88}{100}$ x 100g	5,88

Akuades	Ad 100	= 100 g - (0 + 4,5 + 10 + 0,2 + 0,1 + 0,05 + 7,5 + 3,12 + 5,88) g = 100 g – 31,35 g	68,65

6. Penimbangan emulgel kontrol negatif III

Formula III	Komposisi (%)	Perhitungan	Penimbangan (g)
Zat aktif	0	$= \frac{0}{100}$ x 100g	0
HPMC	5,5	$= \frac{5,5}{100}$ x 100g	5,5
PEG	10	$= \frac{10}{100}$ x 100g	10
Metil paraben	0,2	$= \frac{0,2}{100}$ x 100g	0,2
Propil paraben	0,1	$= \frac{0,1}{100}$ x 100g	0,1
Oleum menthae piperitae	0,05	$= \frac{0,05}{100}$ x 100g	0,05
Paraffin cair	7,5	$= \frac{7,5}{100}$ x 100g	7,5
Tween 80	3,12	$= \frac{3,12}{100}$ x 100g	3,12
Span 80	5,88	$= \frac{5,88}{100}$ x 100g	5,88
Akuades	Ad 100	= 100 g - (0 + 5,5 + 10 + 0,2 + 0,1 + 0,05 + 7,5 + 3,12 + 5,88) g = 100 g – 32,35 g	67,65

7. Penimbangan emulgel kontrol positif I

Formula I	Komposisi (%)	Perhitungan	Penimbangan (g)
Vitamin C	10	$= \frac{10}{100}$ x 100g	10
HPMC	3,5	$= \frac{3,5}{100}$ x 100g	3,5
PEG	10	$= \frac{10}{100}$ x 100g	10
Metil paraben	0,2	$= \frac{0,2}{100}$ x 100g	0,2
Propil paraben	0,1	$= \frac{0,1}{100}$ x 100g	0,1
Oleum menthae piperitae	0,05	$= \frac{0,05}{100}$ x 100g	0,05
Paraffin cair	7,5	$= \frac{7,5}{100}$ x 100g	7,5
Tween 80	3,12	$= \frac{3,12}{100}$ x 100g	3,12
Span 80	5,88	$= \frac{5,88}{100}$ x 100g	5,88
Akuades	Ad 100	= 100 g - (10 + 3,5 + 10 + 0,2 + 0,1 + 0,05 + 7,5 + 3,12 + 5,88) g = 100 g – 40,35 g	59,65

8. Penimbangan emulgel kontrol positif II

Formula II	Komposisi (%)	Perhitungan	Penimbangan (g)
Vitamin C	10	$= \frac{10}{100}$ x 100g	10
HPMC	4,5	$= \frac{4,5}{100}$ x 100g	4,5
PEG	10	$= \frac{10}{100}$ x 100g	10
Metil paraben	0,2	$= \frac{0,2}{100}$ x 100g	0,2
Propil paraben	0,1	$= \frac{0,1}{100}$ x 100g	0,1
Oleum menthae piperitae	0,05	$= \frac{0,05}{100}$ x 100g	0,05
Paraffin cair	7,5	$= \frac{7,5}{100}$ x 100g	7,5
Tween 80	3,12	$= \frac{3,12}{100}$ x 100g	3,12
Span 80	5,88	$= \frac{5,88}{100}$ x 100g	5,88
Akuades	Ad 100	= 100 g - (10 + 4,5 + 10 + 0,2 + 0,1 + 0,05 + 7,5 + 3,12 + 5,88) g = 100 g – 41,35 g	58,65

9. Penimbangan emulgel kontrol positif III

Formula III	Komposisi (%)	Perhitungan	Penimbangan (g)
Vitamin C	10	$= \frac{10}{100}$ x 100g	10
HPMC	5,5	$= \frac{5,5}{100}$ x 100g	5,5
PEG	10	$= \frac{10}{100}$ x 100g	10
Metil paraben	0,2	$= \frac{0,2}{100}$ x 100g	0,2
Propil paraben	0,1	$= \frac{0,1}{100}$ x 100g	0,1
Oleum menthae piperitae	0,05	$= \frac{0,05}{100}$ x 100g	0,05
Paraffin cair	7,5	$= \frac{7,5}{100}$ x 100g	7,5
Tween 80	3,12	$= \frac{3,12}{100}$ x 100g	3,12
Span 80	5,88	$= \frac{5,88}{100}$ x 100g	5,88
Akuades	Ad 100	= 100 g - (10 + 5,5 + 10 + 0,2 + 0,1 +0 ,05 + 7,5 + 3,12 + 5,88) g = 100 g – 42,35 g	57,65

Proses penimbangan bahan

Persiapan pembuatan formula

Hasil pembuatan emulgel

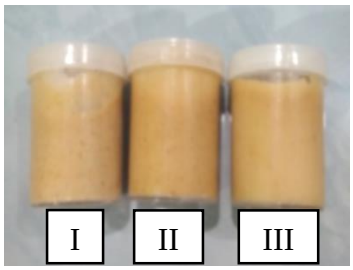
Hasil pembuatan emulsi

Hasil pembuatan gel

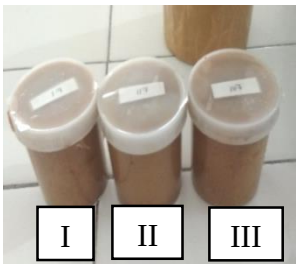
Hasil akhir emulgel

Lampiran 12. Pengujian organoleptis formula

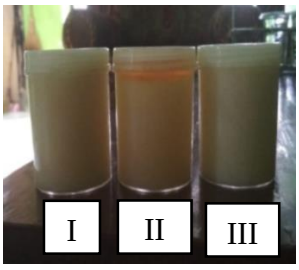
Sampel yang diuji organoleptis, yaitu kontrol negatif yang hanya terdiri dari basis masing-masing formula, sampel yang telah diberi zat aktif berupa ekstrak etanol 70 % buah mengkudu, dan kontrol positif dari masing-masing formula yang diberi zat aktif berupa vitamin C.



Formula I, II, dan III hari ke-0

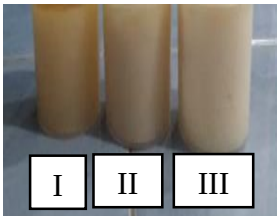


Formula I, II, dan III hari ke-21

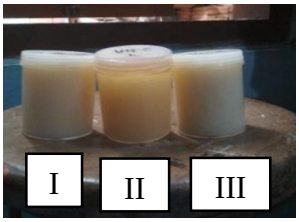


Kontrol negatif hari ke-0

Kontrol negatif hari ke-21



Kontrol positif hari ke-0



Kontrol positif hari ke-21

Lampiran 13. Pengujian homogenitas

Sampel sebelum diuji

Sampel setelah ditutup dengan *deck glass* memiliki warna rata tanpa granul

Lampiran 14. Pengujian *p*H

1. Proses pengujian *p*H

Kalibrasi alat menggunakan akuades menunjukkan nilai *p*H 7

Uji *p*H formula

Uji *p*H kontrol negatif

Uji *p*H kontrol positif

Uji *p*H ekstrak

2. Data hasil uji *p*H sediaan emulgel

Waktu	Replikasi	*p*H									
		Ekstrak	F I	F II	F III	KN I	KN II	KN III	KP I	KP II	KP III
Hari ke-0	1	4,50	4,51	4,70	5,00	5,50	5,58	6,20	4,50	4,60	4,81
	2	4,51	4,52	4,71	5,20	5,48	5,60	6,10	4,52	4,63	4,71
	3	4,52	4,50	4,72	5,10	5,49	5,59	5,59	4,53	4,62	4,75
Rata-rata ± SD		4,51 ± 0,0100	4,51 ± 0,0100	4,71 ± 0,0100	5,1 ± 0,0100	5,49 ± 0,0100	5,59 ± 0,0100	5,96 ± 0,3271	4,52 ± 0,0153	4,62 ± 0,0153	4,76 ± 0,0503
Hari ke-21	1	4,50	4,49	4,69	5,00	5,49	5,58	6,00	4,49	4,62	4,75
	2	4,51	4,52	4,72	4,98	5,48	5,59	6,20	4,52	4,61	4,72
	3	4,49	4,50	4,70	4,99	5,50	5,57	5,59	4,50	4,60	4,74
Rata-rata ± SD		4,5 ± 0,0100	4,5 ± 0,0153	4,7 ± 0,0153	4,99 ± 0,0100	5,49 ± 0,0100	5,58 ± 0,0100	5,93 ± 0,3110	4,5 ± 0,0153	4,61 ± 0,0100	4,74 ± 0,0153

3. Hasil analisis uji SPSS

Tests of Normality

	FORMULA	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
PHI	EKSTRAK	.175	3	.	1.000	3	1.000
	F I	.175	3	.	1.000	3	1.000
	FII	.175	3	.	1.000	3	1.000
	F III	.175	3	.	1.000	3	1.000
	KN I	.175	3	.	1.000	3	1.000
	KN II	.175	3	.	1.000	3	1.000
	KN III	.329	3	.	.869	3	.293
	KP I	.253	3	.	.964	3	.637
	KP II	.253	3	.	.964	3	.637
	KP III	.219	3	.	.987	3	.780

a. Lilliefors Significance Correction

Tests of Normality

	FORMULA	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
PHII	EKSTRAK	.175	3	.	1.000	3	1.000
	F I	.253	3	.	.964	3	.637
	FII	.253	3	.	.964	3	.637
	F III	.175	3	.	1.000	3	1.000
	KN I	.175	3	.	1.000	3	1.000
	KN II	.175	3	.	1.000	3	1.000
	KN III	.256	3	.	.962	3	.625
	KP I	.253	3	.	.964	3	.637
	KP II	.175	3	.	1.000	3	1.000
	KP III	.253	3	.	.964	3	.637

a. Lilliefors Significance Correction

Group Statistics

	FORMULA	N	Mean	Std. Deviation	Std. Error Mean
PHI	EKSTRAK	3	4.5100	.01000	.00577
	F I	3	4.5100	.01000	.00577
PHII	EKSTRAK	3	4.5000	.01000	.00577
	F I	3	4.5033	.01528	.00882

Independent Samples Test

		Levene's Test for Equality of Variances F	Sig.	t-test for Equality of Means t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
PHI	Equal variances assumed	.000	1.000	.000	4	1.000	.00000	.00816	-.02267	.02267
	Equal variances not assumed			.000	4.000	1.000	.00000	.00816	-.02267	.02267
PHII	Equal variances assumed	.727	.442	-.316	4	.768	-.00333	.01054	-.03260	.02593
	Equal variances not assumed			-.316	3.448	.770	-.00333	.01054	-.03454	.02788

PHI

Tukey HSD

FORMULA	N	Subset for alpha = 0.05 1	2	3	4
EKSTRAK	3	4.5100			
F I	3	4.5100			
KP I	3	4.5167			
KP II	3	4.6167			
FII	3	4.7100			
KP III	3	4.7567			
F III	3		5.1000		
KN I	3			5.4900	
KN II	3			5.5900	
KN III	3				5.9633
Sig.		.219	1.000	.977	1.000

Means for groups in homogeneous subsets are displayed.

PHII

Tukey HSD

FORMULA	N	Subset for alpha = 0.05 1	2	3	4
EKSTRAK	3	4.5000			
F I	3	4.5033			
KP I	3	4.5033			
KP II	3	4.6100			
FII	3	4.7033			
KP III	3	4.7367	4.7367		
F III	3		4.9900		
KN I	3			5.4900	
KN II	3			5.5800	
KN III	3				5.9300
Sig.		.162	.111	.977	1.000

Means for groups in homogeneous subsets are displayed.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pH_1	.6947	30	.04368	.00797
	pH_1	.6929	30	.04323	.00789

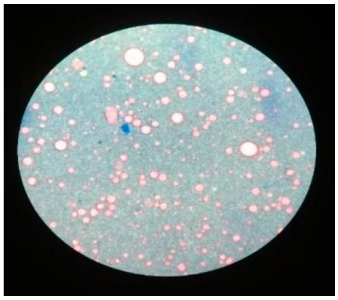
Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	pH_1 & pH_1	30	.994	.000

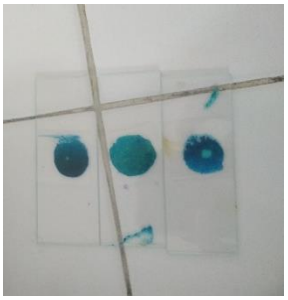
Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	pH_1 - pH_1	.00185	.00486	.00089	.00004	.00367	2.091	29	.045

Lampiran 15. Pengujian tipe emulgel

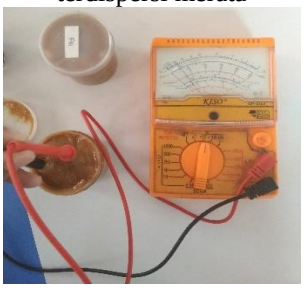


Methylene blue (+) warna biru terdispersi merata dan sudan III (-) warna merah tidak terdispersi merata



Preparat uji pewarnaan

Proses pengamatan uji tipe emulgel



Sampel dapat menghantarkan listrik

Adanya pergerakan jarum pada multimeter

Larututan *methylene blue*

Larutan Sudan III

Lampiran 16. Pengujian viskositas

1. Proses pengujian viskositas

Viskometer Rion VT-04F

Hasil pengujian viskositas

Proses pengujian viskositas dengan rotor nomor 2

2. Data hasil uji viskositas

Waktu	Replikasi	Viskositas (dPa's)								
		F I	F II	F III	KN I	KN II	KN III	KP I	KP II	KP III
Hari ke-1	1	250	350	500	250	250	300	250	300	350
	2	200	400	500	200	200	400	200	350	350
	3	250	400	450	150	250	300	250	300	300
Rata-rata ± SD		233,33 ± 28,867	383,33 ± 28,867	483,33 ± 28,867	200 ± 50	233,33 ± 28,867	333,33 ± 57,735	233,33 ± 28,867	316,67 ± 28,867	333,33 ± 28,867
Hari ke-21	1	150	200	300	150	200	200	200	300	300
	2	200	250	400	150	150	300	210	350	350
	3	200	200	300	100	200	200	200	250	300
Rata-rata ± SD		153,33 ± 28,867	216,67 ± 28,867	333,33 ± 57,735	133,33 ± 28,867	183,33 ± 28,867	233,33 ± 57,735	203,33 ± 5,7735	300 ± 50	316,67 ± 28,867

3. Hasil analisis SPSS uji viskositas

[DataSet0] C:\Users\Erlinda Novita S\Documents\VISKOSITAS.sav

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
VISKOSITASI	27	309.44	87.622	200	500
VISKOSITASII	27	232.22	79.824	80	400

One-Sample Kolmogorov-Smirnov Test

		VISKOSITASI	VISKOSITASII
N		27	27
Normal Parameters[a]	Mean	309.44	232.22
	Std. Deviation	87.622	79.824
Most Extreme Differences	Absolute	.177	.195
	Positive	.177	.175
	Negative	-.106	-.195
Kolmogorov-Smirnov Z		.921	1.014
Asymp. Sig. (2-tailed)		.364	.256

a. Test distribution is Normal.

[DataSet0] C:\Users\Erlinda Novita S\Documents\VISKOSITAS.sav

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
VISKOSITASI	1.302	8	18	.304
VISKOSITASII	2.098	8	18	.091

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
VISKOSITASI	Between Groups	179433.333	8	22429.167	20.003	.000
	Within Groups	20183.333	18	1121.296		
	Total	199616.667	26			
VISKOSITASII	Between Groups	105585.185	8	13198.148	8.887	.000
	Within Groups	26733.333	18	1485.185		
	Total	132318.519	26			

Homogeneous

VISKOSITASI

Tukey HSD

FORMULA	N	Subset for alpha = 0.05		
		1	2	3
F I	3	233.33		
KN I	3	233.33		
KN II	3	233.33		
KP I	3	235.00		
KP II	3	316.67	316.67	
KN III	3		333.33	
KP III	3		333.33	
F II	3		383.33	
F III	3			483.33
Sig.		.118	.322	1.000

Means for groups in homogeneous subsets are displayed.

VISKOSITASII

Tukey HSD

FORMULA	N	Subset for alpha = 0.05			
		1	2	3	4
KN I	3	133.33			
KN II	3	183.33			
KP I	3	203.33	203.33		
F I	3	216.67	216.67	216.67	
F II	3	216.67	216.67	216.67	
KN III	3	233.33	233.33	233.33	233.33
KP II	3		300.00	300.00	300.00
KP III	3			316.67	316.67
F III	3				333.33
Sig.		.093	.113	.093	.093

Means for groups in homogeneous subsets are displayed.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	VISKOSITASI	309.44	27	87.622	16.863
	VISKOSITASII	237.41	27	71.338	13.729

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	VISKOSITASI & VISKOSITASII	27	.692	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	VISKOSITASI - VISKOSITASII	72.037	64.125	12.341	46.670	97.404	5.837	26	.000

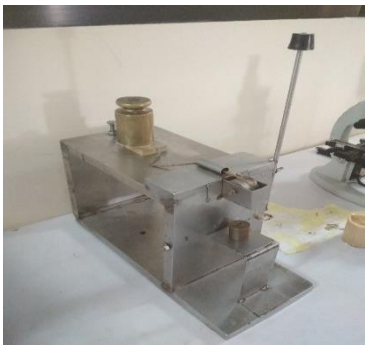
Lampiran 17. Pengujian daya lekat

1. Data hasil pengujian daya lekat

Waktu	Replikasi	Daya lekat (detik)								
		F I	F II	F III	KN I	KN II	KN III	KP I	KP II	KP III
Hari ke-1	1	1,23	1,25	1,31	1,20	1,25	1,31	1,24	1,28	1,32
	2	1,21	1,24	1,29	1,21	1,22	1,30	1,22	1,25	1,34
	3	1,20	1,26	1,30	1,22	1,23	1,29	1,20	1,27	1,29
Rata-rata ± SD		1,21 ± 0,0153	1,25 ± 0,0100	1,3 ± 0,0100	1,21 ± 0,0100	1,23 ± 0,0152	1,3 ± 0,0100	1,22 ± 0,0200	1,27 ± 0,0150	1,32 ± 0,0252
Hari ke-21	1	1,14	1,21	1,25	1,17	1,23	1,25	1,20	1,22	1,26
	2	1,17	1,23	1,28	1,21	1,24	1,24	1,18	1,23	1,28
	3	1,20	1,25	1,26	1,20	1,22	1,26	1,19	1,24	1,27
Rata-rata ± SD		1,17 ± 0,0300	1,23 ± 0,0200	1,26 ± 0,0152	1,19 ± 0,0208	1,23 ± 0,0100	1,25 ± 0,0100	1,19 ± 0,0100	1,23 ± 0,0100	1,27 ± 0,0100

2. Proses pengujian daya lekat

Sampel diletakkan pada alat dan ditutup dengan kaca



Sampel diberi beban 1 kg selama 5 menit

3. Hasil analisis SPSS uji daya lekat

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	FORMULA	Statistic	df	Sig.	Statistic	df	Sig.
DAYA_LEKATI	F1	.253	3	.	.964	3	.637
	F2	.175	3	.	1.000	3	1.000
	F3	.175	3	.	1.000	3	1.000
	KN1	.175	3	.	1.000	3	1.000
	KN2	.253	3	.	.964	3	.637
	KN3	.175	3	.	1.000	3	1.000
	KP1	.175	3	.	1.000	3	1.000
	KP2	.253	3	.	.964	3	.637
	KP3	.219	3	.	.987	3	.780

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

DAYA_LEKATI

Levene Statistic	df1	df2	Sig.
.708	8	18	.682

ANOVA

DAYA_LEKATI

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.040	8	.005	21.270	.000
Within Groups	.004	18	.000		
Total	.045	26			

DAYA_LEKATI

Tukey HSD

FORMULA	N	Subset for alpha = 0.05			
		1	2	3	4
KN1	3	1.2100			
F1	3	1.2133			
KP1	3	1.2200			
KN2	3	1.2333	1.2333		
F2	3	1.2500	1.2500		
KP2	3		1.2667	1.2667	
F3	3			1.3000	1.3000
KN3	3			1.3000	1.3000
KP3	3				1.3167
Sig.		.092	.232	.232	.910

Means for groups in homogeneous subsets are displayed.

Tests of Normality

	FORMULA	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
DAYA_LEKATII	F1	.186	3	.	.998	3	.921
	F2	.175	3	.	1.000	3	1.000
	F3	.253	3	.	.964	3	.637
	KN1	.292	3	.	.923	3	.463
	KN2	.175	3	.	1.000	3	1.000
	KN3	.175	3	.	1.000	3	1.000
	KP1	.175	3	.	1.000	3	1.000
	KP2	.175	3	.	1.000	3	1.000
	KP3	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

DAYA_LEKATII

Levene Statistic	df1	df2	Sig.
.770	8	18	.633

ANOVA

DAYA_LEKATII

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.028	8	.004	12.069	.000
Within Groups	.005	18	.000		
Total	.034	26			

Homogeneous

DAYA_LEKATII

Tukey HSD

FORMULA	N	Subset for alpha = 0.05			
		1	2	3	4
F1	3	1.1713			
KP1	3	1.1900	1.1900		
KN1	3	1.1933	1.1933	1.1933	
KN2	3		1.2300	1.2300	1.2300
F2	3		1.2300	1.2300	1.2300
KP2	3			1.2400	1.2400
KN3	3				1.2500
F3	3				1.2633
KP3	3				1.2700
Sig.		.809	.166	.070	.166

Means for groups in homogeneous subsets are displayed.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	DAYALEKATI	1.2567	27	.04142	.00797
	DAYALEKATII	1.2252	27	.03580	.00689

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	DAYALEKATI & DAYALEKATII	27	.802	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	DAYALEKATI - DAYALEKATII	.03144	.02487	.00479	.02161	.04128	6.569	26	.000

Lampiran 18. Pengujian daya sebar

1. Data hasil pengujian daya sebar hari ke-1

Beban	Formula	Nomor	Replikasi I (mm)	Replikasi II (mm)	Replikasi III (mm)	Rata-rata (mm)	Rata-rata (cm)	SD
Awal (tanpa beban)	Kontrol negatif I	1	42	41	42			
		2	45	46	44			
		3	45	45	45			
		4	45	45	45			
	Rata-rata		44,25	44,25	44	44,167	4,417	0,144
	Kontrol negatif II	1	34	33	33			
		2	35	35	35			
		3	35	35	35			
		4	35	35	35			
	Rata-rata		34,75	34,5	34,5	34,583	3,458	0,144
	Kontrol negatif III	1	33	34	32			
		2	32	32	32			
		3	35	34	36			
		4	35	34	36			
	Rata-rata		33,75	33,5	34	33,750	3,3750	0,250
	FI	1	40	40	40			
		2	42	45	45			
		3	46	43	46			
		4	45	43	46			
	Rata-rata		43,25	42,75	44,25	43,417	4,342	0,764
	FII	1	34	34	34			
		2	35	33	34			
		3	35	34	36			
		4	35	34	36			
	Rata-rata		34,75	33,75	35	34,500	3,450	0,661
	FIII	1	33	33	33			

		2	32	32	32			
		3	35	35	35			
		4	35	35	35			
	Rata-rata		33,75	33,75	33,75	33,750	3,375	0,000
	Kontrol positif I	1	40	40	45			
		2	48	46	45			
		3	47	47	44			
		4	45	43	46			
	Rata-rata		45	44	45	44,667	4,467	0,577
	Kontrol positif II	1	34	34	34			
		2	38	33	35			
		3	35	35	36			
		4	35	34	36			
	Rata-rata		35,5	34	35,25	34,917	3,492	0,804
	Kontrol positif III	1	33	33	33			
		2	32	32	36			
		3	35	34	35			
		4	35	35	35			
	Rata-rata		33,75	33,5	34,75	34,000	3,400	0,661

Beban	Formula	Nomor	Replikasi I (mm)	Replikasi II (mm)	Replikasi III (mm)	Rata-rata (mm)	Rata-rata (cm)	SD
50g	Kontrol negatif I	1	48	49	48			
		2	50	50	50			
		3	50	51	49			
		4	50	50	50			
	Rata-rata		49,5	50	49,25	49,583	4,958	0,382
	Kontrol negatif II	1	38	39	40			
		2	38	38	38			
		3	37	37	37			
		4	39	40	38			
	Rata-rata		38	38,5	38,25	38,250	3,825	0,250
	Kontrol negatif III	1	37	37	37			
		2	35	35	35			
		3	35	34	36			
		4	38	38	38			
	Rata-rata		36,25	36	36,5	36,250	3,625	0,250
	FI	1	48	50	49			
		2	50	50	50			
		3	50	50	50			
		4	50	50	50			
	Rata-rata		49,5	50	49,75	49,750	4,975	0,250

FII	1	38	37	39			
	2	38	38	38			
	3	37	37	37			
	4	39	39	39			
Rata-rata		38	37,75	38,25	38,000	3,800	0,250
FIII	1	37	37	37			
	2	35	35	35			
	3	35	35	35			
	4	38	38	38			
Rata-rata		36,25	36,25	36,25	36,250	3,625	0,000
Kontrol positif I	1	48	50	49			
	2	55	54	52			
	3	50	50	53			
	4	50	52	50			
Rata-rata		50,75	51,5	51	51,083	5,108	0,382
Kontrol positif II	1	38	37	38			
	2	37	33	38			
	3	37	37	37			
	4	39	39	39			
Rata-rata		37,75	36,5	38	37,417	3,742	0,804
Kontrol positif III	1	37	37	37			
	2	36	35	36			
	3	35	37	35			
	4	38	38	38			
Rata-rata		36,5	36,75	36,5	36,583	3,658	0,144

Beban	Formula	Nomor	Replikasi I (mm)	Replikasi II (mm)	Replikasi III (mm)	Rata-rata (mm)	Rata-rata (cm)	SD
100g	Kontrol negatif I	1	50	49	49			
		2	53	52	51			
		3	53	53	53			
		4	52	52	53			
Rata-rata			52	51,5	51,5	51,667	5,167	0,289
	Kontrol negatif II	1	40	40	40			
		2	42	41	41			
		3	39	39	39			
		4	42	42	42			
Rata-rata			40,75	40,5	40,5	40,583	4,058	0,144
	Kontrol negatif III	1	39	40	39			
		2	40	40	40			
		3	37	37	37			
		4	40	41	41			

Rata-rata		39	39,5	39,25	39,250	3,925	0,250
FI	1	50	50	50			
	2	53	53	53			
	3	53	53	53			
	4	52	52	52			
Rata-rata		52	52	52	52,000	5,200	0,000
FII	1	40	40	40			
	2	42	42	42			
	3	39	39	39			
	4	42	42	42			
Rata-rata		40,75	40,75	40,75	40,750	4,075	0,000
FIII	1	39	39	39			
	2	40	40	40			
	3	37	37	37			
	4	41	41	41			
Rata-rata		39,25	39,25	39,25	39,250	3,925	0,000
Kontrol positif I	1	50	50	50			
	2	55	53	53			
	3	53	54	53			
	4	52	52	52			
Rata-rata		52,5	52,25	52	52,250	5,225	0,250
Kontrol positif II	1	40	40	40			
	2	43	45	46			
	3	39	39	39			
	4	42	42	42			
Rata-rata		41	41,5	41,75	41,417	4,142	0,382
Kontrol positif III	1	39	39	35			
	2	40	42	40			
	3	36	37	37			
	4	41	41	41			
Rata-rata		39	39,75	38,25	39,000	3,900	0,750

Beban	Formula	Nomor	Replikasi I (mm)	Replikasi II (mm)	Replikasi III (mm)	Rata-rata (mm)	Rata-rata (cm)	SD
150g	Kontrol negatif I	1	52	53	53			
		2	53	54	52			
		3	53	53	53			
		4	55	55	55			
Rata-rata			53,25	53,75	53,25	53,417	5,342	0,289
Kontrol negatif II		1	43	43	43			
		2	44	44	44			
		3	43	43	43			

	4	42	40	41			
Rata-rata		43	42,5	42,75	42,750	4,275	0,250
Kontrol negatif III	1	42	42	42			
	2	42	42	42			
	3	40	40	40			
	4	42	40	40			
Rata-rata		41,5	41	41	41,167	4,117	0,289
FI	1	53	53	53			
	2	53	54	52			
	3	53	53	53			
	4	55	55	55			
Rata-rata		53,5	53,75	53,25	53,500	5,350	0,250
FII	1	43	43	43			
	2	44	44	44			
	3	43	43	43			
	4	42	40	41			
Rata-rata		43	42,5	42,75	42,750	4,275	0,250
FIII	1	42	42	42			
	2	42	42	42			
	3	40	40	40			
	4	42	40	40			
Rata-rata		41,5	41	41	41,167	4,117	0,288
Kontrol positif I	1	53	53	53			
	2	56	54	52			
	3	53	57	53			
	4	55	55	55			
Rata-rata		54,25	54,75	53,25	54,083	5,408	0,764
Kontrol positif II	1	43	43	45			
	2	44	44	44			
	3	46	44	43			
	4	42	40	41			
Rata-rata		43,75	42,75	43,25	43,250	4,325	0,500
Kontrol positif III	1	42	42	42			
	2	44	42	42			
	3	40	43	48			
	4	42	40	40			
Rata-rata		42	41,75	43	42,250	4,225	0,661

Beban	Formula	Nomor	Replikasi I (mm)	Replikasi II (mm)	Replikasi III (mm)	Rata-rata (mm)	Rata-rata (cm)	SD
200g	Kontrol negatif I	1	56	56	56			
		2	60	60	60			

	3	59	59	59			
	4	56	56	56			
Rata-rata		57,75	57,75	57,75	57,750	5,775	0,000
Kontrol negatif II	1	45	45	45			
	2	47	47	47			
	3	46	45	45			
	4	49	49	49			
Rata-rata		46,75	46,5	46,5	46,583	4,658	0,144
Kontrol negatif III	1	44	44	44			
	2	45	45	45			
	3	45	45	45			
	4	43	43	43			
Rata-rata		44,25	44,25	44,25	44,250	4,425	0,000
FI	1	56	55	54			
	2	60	58	62			
	3	59	60	58			
	4	56	56	56			
Rata-rata		57,75	57,25	57,5	57,500	5,750	0,250
FII	1	45	45	45			
	2	47	47	47			
	3	45	45	45			
	4	49	49	49			
Rata-rata		46,5	46,5	46,5	46,500	4,650	0,000
FIII	1	44	44	44			
	2	45	45	45			
	3	45	45	45			
	4	43	43	43			
Rata-rata		44,25	44,25	44,25	44,250	4,425	0,000
Kontrol positif I	1	58	55	54			
	2	60	53	54			
	3	59	60	58			
	4	56	56	56			
Rata-rata		58,25	56	55,5	56,583	5,658	1,465
Kontrol positif II	1	45	45	45			
	2	47	47	47			
	3	43	45	42			
	4	49	43	49			
Rata-rata		46	45	45,75	45,583	4,558	0,520
Kontrol positif III	1	44	44	44			
	2	46	45	44			
	3	45	42	45			
	4	43	43	43			

	Rata-rata		44,5	43,5	44	44,000	4,400	0,500

2. Data hasil uji daya sebar hari ke-21

Beban	Formula	Nomor	Replikasi I (mm)	Replikasi II (mm)	Replikasi III (mm)	Rata-rata (mm)	Rata-rata (cm)	SD
Awal (tanpa beban)	Kontrol negatif I	1	46	41	42			
		2	45	43	44			
		3	48	46	46			
		4	45	45	46			
	Rata-rata		46	43,75	44,5	44,750	4,475	1,146
	Kontrol negatif II	1	36,25	34	35,5			
		2	36,25	34	35,5			
		3	36,25	34	35,5			
		4	36,25	34	35,5			
	Rata-rata		37,25	36,5	36,5	36,750	3,675	0,433
	Kontrol negatif III	1	33	34	32			
		2	32	32	37			
		3	42	34	39			
		4	35	43	36			
	Rata-rata		35,5	35,75	36	35,750	3,575	0,250
	FI	1	40	40	40			
		2	45	44	45			
		3	48	46	43			
		4	43	43	46			
	Rata-rata		44	43,25	43,5	43,583	4,358	0,382
	FII	1	34	34	34			
		2	37	33	34			
		3	39	35	38			
		4	35	34	36			
	Rata-rata		36,25	34	35,5	35,250	3,525	1,146
	FIII	1	33	33	38			
		2	32	32	32			
		3	38	36	36			
		4	35	37	35			
	Rata-rata		34,5	34,5	35,25	34,750	3,475	0,433
	Kontrol positif I	1	40	42	45			
		2	52	46	48			
		3	46	48	49			
		4	45	43	46			
	Rata-rata		45,75	44,75	47	45,833	4,583	1,127
		1	34	34	34			
		2	38	36	35			

	Kontrol positif II	3	38	35	39			
		4	35	34	36			
	Rata-rata		36,25	34,75	36	35,667	3,567	0,804
	Kontrol positif III	1	33	33	33			
		2	32	36	36			
		3	38	34	37			
		4	35	35	35			
	Rata-rata		34,5	34,5	35,25	34,750	3,475	0,433

Beban	Formula	Nomor	Replikasi I (mm)	Replikasi II (mm)	Replikasi III (mm)	Rata-rata (mm)	Rata-rata (cm)	SD
50g	Kontrol negatif I	1	48	49	48			
		2	50	50	54			
		3	54	51	49			
		4	52	56	50			
	Rata-rata		51	51,5	50,25	50,917	5,092	0,629
	Kontrol negatif II	1	39	40	40			
		2	36	38	37			
		3	37	37	37			
		4	39	40	38			
	Rata-rata		37,75	38,75	38	38,167	3,817	0,520
	Kontrol negatif III	1	37	37	37			
		2	38	37	38			
		3	35	34	36			
		4	38	38	38			
	Rata-rata		37	36,5	37,25	36,917	3,692	0,382
	FI	1	48	50	49			
		2	50	51	54			
		3	52	50	50			
		4	50	50	50			
	Rata-rata		50	50,25	50,75	50,333	5,033	0,382
	FII	1	38	37	39			
		2	38	38	38			
		3	38	38	37			
		4	39	39	39			
	Rata-rata		38,25	38	38,25	38,167	3,817	0,144
	FIII	1	37	37	37			
		2	35	35	35			
		3	36	37	38			
		4	38	38	38			
	Rata-rata		36,5	36,75	37	36,750	3,675	0,250

	Kontrol positif I	1	48	50	49			
		2	55	54	52			
		3	53	50	53			
		4	50	52	50			
	Rata-rata		51,5	51,5	51	51,333	5,133	0,2887
	Kontrol positif II	1	38	37	38			
		2	37	33	38			
		3	37	37	37			
		4	39	39	39			
	Rata-rata		37,75	36,5	38	37,417	3,742	0,804
	Kontrol positif III	1	37	37	37			
		2	36	35	36			
		3	35	37	35			
		4	38	38	38			
	Rata-rata		36,5	36,75	36,5	36,583	3,658	0,144

Beban	Formula	Nomor	Replikasi I (mm)	Replikasi II (mm)	Replikasi III (mm)	Rata-rata (mm)	Rata-rata (cm)	SD
100g	Kontrol negatif I	1	50	49	49			
		2	53	52	51			
		3	53	53	53			
		4	52	52	53			
	Rata-rata		52	51,5	51,5	51,667	5,167	0,289
	Kontrol negatif II	1	40	40	40			
		2	42	41	41			
		3	39	39	39			
		4	42	42	42			
	Rata-rata		40,75	40,5	40,5	40,583	4,058	0,144
	Kontrol negatif III	1	39	40	39			
		2	40	40	40			
		3	37	37	37			
		4	40	41	41			
	Rata-rata		39	39,5	39,25	39,250	3,925	0,250
	FI	1	50	50	50			
		2	53	53	53			
		3	53	53	53			
		4	52	52	52			
	Rata-rata		52	52	52	52,000	5,200	0,000
	FII	1	40	40	40			
		2	42	42	42			
		3	39	39	39			

		4	42	42	42			
Rata-rata			40,75	40,75	40,75	40,750	4,075	0,000
	FIII	1	39	39	39			
		2	40	40	40			
		3	37	38	37			
		4	41	41	41			
Rata-rata			39,25	39,5	39,25	39,333	3,933	0,144
	Kontrol positif I	1	50	50	50			
		2	55	53	53			
		3	53	54	53			
		4	52	52	52			
Rata-rata			52,5	52,25	52	52,250	5,225	0,250
	Kontrol positif II	1	40	40	40			
		2	43	45	46			
		3	39	39	39			
		4	42	42	42			
Rata-rata			41	41,5	41,75	41,417	4,142	0,382
	Kontrol positif III	1	39	39	35			
		2	40	42	40			
		3	36	37	37			
		4	41	41	41			
Rata-rata			39	39,75	38,25	39,000	3,900	0,750

Beban	Formula	Nomor	Replikasi I (mm)	Replikasi II (mm)	Replikasi III (mm)	Rata-rata (mm)	Rata-rata (cm)	SD
150g	Kontrol negatif I	1	52	53	53			
		2	53	54	52			
		3	53	55	53			
		4	55	55	55			
Rata-rata			53,25	54,25	53,25	53,583	5,358	0,577
	Kontrol negatif II	1	43	43	43			
		2	44	44	44			
		3	43	44	43			
		4	42	40	41			
Rata-rata			43	42,75	42,75	42,833	4,283	0,144
	Kontrol negatif III	1	42	42	42			
		2	42	42	42			
		3	40	41	40			
		4	42	40	42			
Rata-rata			41,5	41,25	41,5	41,417	4,142	0,144
	FI	1	53	53	53			

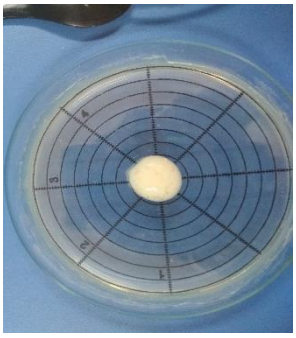
	2	53	54	52			
	3	55	53	56			
	4	55	55	55			
Rata-rata		54	53,75	54	53,917	5,392	0,144
FII	1	43	43	43			
	2	44	44	44			
	3	44	44	43			
	4	42	40	41			
Rata-rata		43,25	42,75	42,75	42,917	4,292	0,289
FIII	1	42	42	42			
	2	42	42	42			
	3	40	41	44			
	4	42	40	40			
Rata-rata		41,5	41,25	42	41,583	4,158	0,382
Kontrol positif I	1	53	54	53			
	2	56	55	52			
	3	53	57	53			
	4	55	55	55			
Rata-rata		54,25	55,25	53,25	54,250	5,425	1,000
Kontrol positif II	1	43	43	45			
	2	44	44	44			
	3	46	44	43			
	4	42	40	41			
Rata-rata		43,75	42,75	43,25	43,250	4,325	0,500
Kontrol positif III	1	42	42	42			
	2	44	42	42			
	3	40	44	48			
	4	42	40	40			
Rata-rata		42	42	43	42,333	4,233	0,577

Beban	Formula	Nomor	Replikasi I (mm)	Replikasi II (mm)	Replikasi III (mm)	Rata-rata (mm)	Rata-rata (cm)	SD
200g	Kontrol negatif I	1	56	56	56			
		2	60	60	60			
		3	59	59	60			
		4	56	56	56			
Rata-rata			57,75	57,75	58	57,833	5,783	0,144
	Kontrol negatif II	1	45	45	45			
		2	47	47	47			
		3	45	48	45			
		4	49	49	49			

Rata-rata		46,5	47,25	46,5	46,750	4,675	0,433
Kontrol negatif III	1	44	44	44			
	2	45	45	45			
	3	45	46	48			
	4	43	43	43			
Rata-rata		44,25	44,5	45	44,583	4,458	0,382
FI	1	56	55	54			
	2	60	60	62			
	3	59	60	58			
	4	56	56	56			
Rata-rata		57,75	57,75	57,5	57,667	5,767	0,144
FII	1	45	45	45			
	2	47	47	48			
	3	45	48	45			
	4	49	49	49			
Rata-rata		46,5	47,25	46,75	46,833	4,683	0,382
FIII	1	44	44	44			
	2	45	45	45			
	3	43	45	48			
	4	43	43	43			
Rata-rata		43,75	44,25	45	44,333	4,433	0,629
Kontrol positif I	1	58	55	54			
	2	60	52	54			
	3	60	60	58			
	4	56	56	56			
Rata-rata		58,5	55,75	55,5	56,583	5,658	1,664
Kontrol positif II	1	45	45	45			
	2	47	47	47			
	3	43	46	44			
	4	49	43	49			
Rata-rata		46	45,25	46,25	45,833	4,583	0,520
Kontrol positif III	1	44	44	44			
	2	46	44	44			
	3	46	42	43			
	4	43	43	43			
Rata-rata		44,75	43,25	43,5	43,833	4,383	0,804

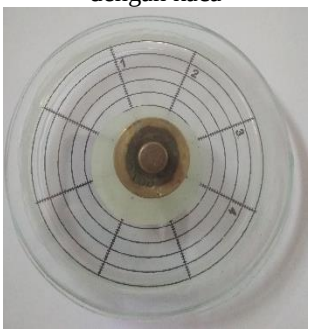
3. Proses uji daya sebar

Sampel sebelum ditutup dengan kaca

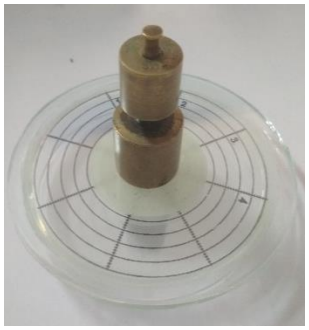


Sampel setelah ditutup dengan kaca

Sampel diberi beban 50 g



Sampel diberi beban 100 g



Sampel diberi beban 150 g

Sampel diberi beban 200 g

4. Hasil analisis SPSS uji daya sebar

Tests of Normality

	FORMULA	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
DAYASEBARI	F I	.191	5	.200*	.972	5	.887
	F II	.124	5	.200*	.998	5	.998
	F III	.143	5	.200*	.989	5	.976
	KN I	.164	5	.200*	.990	5	.980
	KN II	.215	5	.200*	.977	5	.915
	KN III	.144	5	.200*	.988	5	.974
	KP I	.241	5	.200*	.938	5	.651
	KP II	.180	5	.200*	.963	5	.831
	KP III	.178	5	.200*	.968	5	.862
DAYASEBARII	F I	.190	5	.200*	.975	5	.906
	F II	.123	5	.200*	.995	5	.994
	F III	.152	5	.200*	.984	5	.953
	KN I	.228	5	.200*	.970	5	.872
	KN II	.164	5	.200*	.962	5	.825
	KN III	.177	5	.200*	.961	5	.813
	KP I	.225	5	.200*	.954	5	.766
	KP II	.188	5	.200*	.957	5	.790
	KP III	.183	5	.200*	.965	5	.843

a. Lilliefors Significance Correction

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

[DataSet1] C:\Users\Erlinda Novita S\Documents\DAYA LEKAT.sav

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
DAYASEBARI	.044	8	36	1.000
DAYASEBARII	.083	8	36	.999

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
DAYASEBARI	Between Groups	13.869	8	1.734	8.593	.000
	Within Groups	7.263	36	.202		
	Total	21.132	44			
DAYASEBARII	Between Groups	13.775	8	1.722	9.585	.000
	Within Groups	6.467	36	.180		
	Total	20.241	44			

DAYASEBARII

Tukey HSD

FORMULA	N	Subset for alpha = 0.05	
		1	2
KP III	5	3.9100	
F III	5	3.9360	
KN III	5	3.9600	
KP II	5	4.0720	
F II	5	4.0800	
KN II	5	4.1040	
F I	5		5.1460
KN I	5		5.1760
KP I	5		5.2060
Sig.		.998	1.000

Means for groups in homogeneous subsets are displayed.

DAYASEBARI

Tukey HSD

FORMULA	N	Subset for alpha = 0.05	
		1	2
KN III	5	3.8960	
F III	5	3.8980	
KP III	5	3.9180	
KN II	5	4.0260	
F II	5	4.0520	
KP II	5	4.0520	
F I	5		5.1240
KN I	5		5.1340
KP I	5		5.1760
Sig.		1.000	1.000

Means for groups in homogeneous subsets are displayed.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	DAYASEBARI	4.3640	45	.69302	.10331
	DAYASEBARII	4.3989	45	.67826	.10111

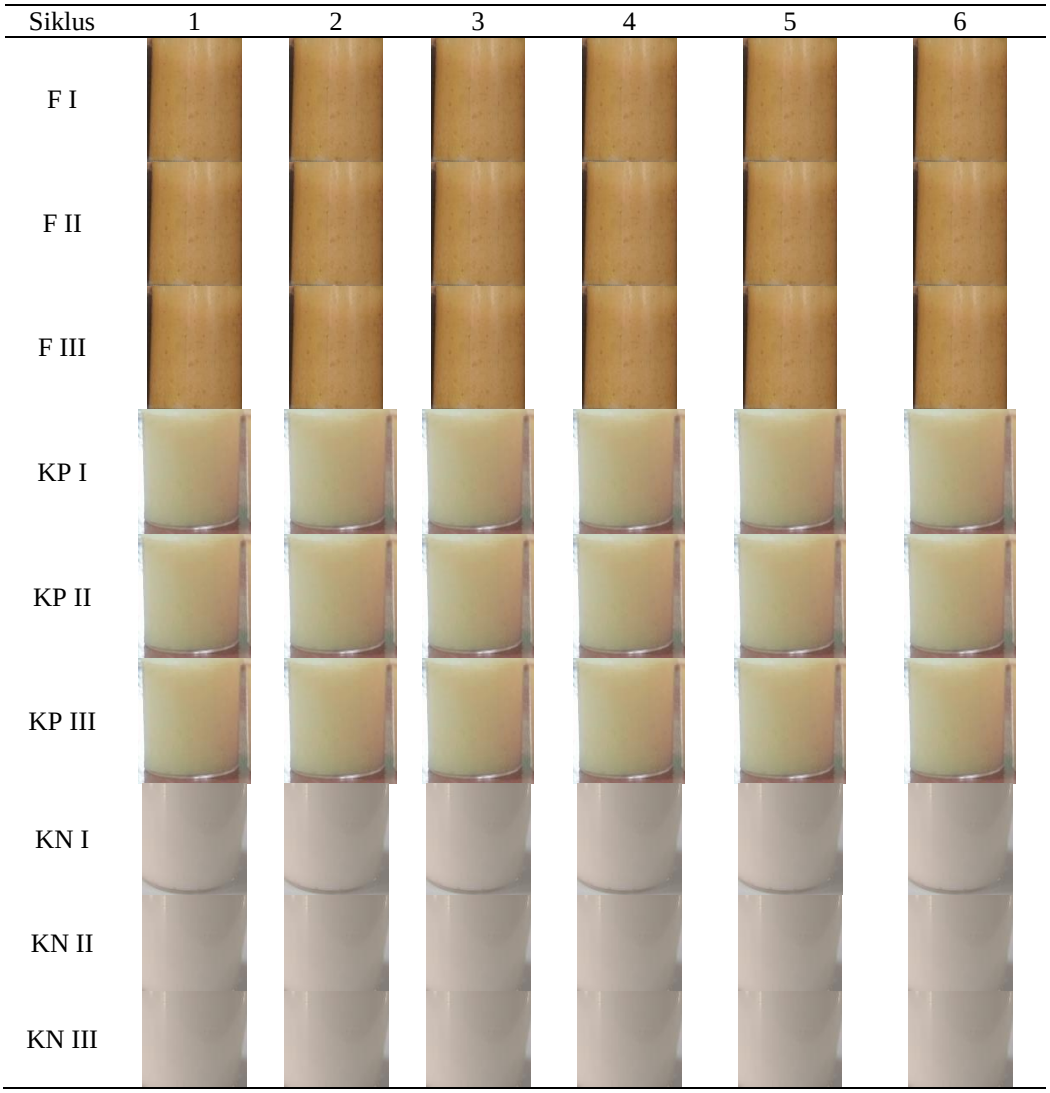
Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	DAYASEBARI & DAYASEBARII	45	.997	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	DAYASEBARI - DAYASEBARII	-.03489	.05524	.00824	-.05149	-.01829	-4.237	44	.000

Lampiran 19. Pengujian stabilitas sediaan emulgel



Keterangan:
F I = emulgel dengan HPMC 3,5 % + zat aktif ekstrak etanol 70 % buah mengkudu 10 %
F II = emulgel dengan HPMC 4,5 % + zat aktif ekstrak etanol 70 % buah mengkudu 10 %
F III = emulgel dengan HPMC 5,5 % + zat aktif ekstrak etanol 70 % buah mengkudu 10 %
KN I = emulgel dengan HPMC 3,5 % dan tanpa zat aktif
KN II = emulgel dengan HPMC 4,5 % dan tanpa zat aktif
KN III = emulgel dengan HPMC 5,5 % dan tanpa zat aktif
KP I = emulgel dengan HPMC 3,5 % + zat aktif vitamin C 10 %
KP II = emulgel dengan HPMC 4,5 % + zat aktif vitamin C 10 %
KP III = emulgel dengan HPMC 5,5 % + zat aktif vitamin C 10 %

Lampiran 20. Pembuatan larutan DPPH

Serbuk DPPH sebagai sumber radikal bebas pada uji aktivitas antioksidan memiliki konsentrasi 158 ppm, larutan DPPH dibuat dengan penimbangan berikut:

Bobot awal vial = 0 g

Bobor serbuk DPPH = 0,0158 g

Konsentrasi larurtan DPPH = 15,8 mg/ 100 mL

= 15.800 µg/ 100 mL

= 158 ppm

Selanjutnya 15,8 mg serbuk DPPH dilarutkan dengan etanol pro analisis dalam labu takar 100 ml yang telah dilapisi *aluminium foil*.

DPPH ditimbang 15,8 g

Etanol *pro analysis*

DPPH dilarutkan etanol *pro analysis* di labu ukur 100 mL

Lampiran 21. Pembuatan larutan induk

Pembuatan larutan induk vitamin C

Massa vitamin C = 10 mg

Etanol pro *analysis* = ad labu tentukur 100 mL

Konsentrasi $= \frac{10\ \text{mg}}{100\ \text{ml}}$

$= \frac{10.000\ \mu\text{g}}{100\ \text{ml}}$

= 100 ppm

Pembuatan larutan induk ekstrak etanol 70 % buah mengkudu

Massa ekstrak = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{50\ \text{mg}}{50\ \text{ml}}$

$= \frac{50.000\ \mu\text{g}}{50\ \text{ml}}$

= 1.000 ppm

Pembuatan larutan induk emulgel “X” dari *skin care* di Yogyakarta

Massa emulgel “X” = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{50\ \text{mg}}{50\ \text{ml}}$

$= \frac{50.000\ \mu\text{g}}{50\ \text{ml}}$

= 1.000 ppm

Pembuatan larutan induk formula I

Massa formula I = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{50\ \text{mg}}{50\ \text{ml}}$

$= \frac{50.000\ \mu\text{g}}{50\ \text{ml}}$

= 1.000 ppm

Pembuatan larutan induk formula II

Massa formula II = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{50\ \text{mg}}{50\ \text{ml}}$

$= \frac{50.000\ \mu\text{g}}{50\ \text{ml}}$

= 1.000 ppm

Pembuatan larutan induk formula III

Massa formula III = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{50\ \text{mg}}{50\ \text{ml}}$

$= \frac{50.000\ \mu\text{g}}{50\ \text{ml}}$

= 1.000 ppm

Pembuatan larutan induk kontrol positif formula I

Massa formula KP I = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{50\ \text{mg}}{50\ \text{ml}}$

$= \frac{50.000\ \mu\text{g}}{50\ \text{ml}}$

= 1.000 ppm

Pembuatan larutan induk kontrol positif formula II

Massa formula KP II = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{50\ \text{mg}}{50\ \text{ml}}$

$= \frac{50.000\ \mu\text{g}}{50\ \text{ml}}$

= 1.000 ppm

Pembuatan larutan induk kontrol positif formula III

Massa formula KP I = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{50\ \text{mg}}{50\ \text{ml}}$

$= \frac{50.000\ \mu\text{g}}{50\ \text{ml}}$

= 1.000 ppm

Pembuatan larutan induk kontrol negatif formula I

Massa formula KN I = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{50\ \text{mg}}{50\ \text{ml}}$

$= \frac{50.000\ \mu\text{g}}{50\ \text{ml}}$

= 1.000 ppm

Pembuatan larutan induk kontrol negatif formula II

Massa formula KN II = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{50\ \text{mg}}{50\ \text{ml}}$

$= \frac{50.000\ \mu\text{g}}{50\ \text{ml}}$

= 1.000 ppm

Pembuatan larutan induk kontrol negatif formula III

Massa formula KN III = 50 mg

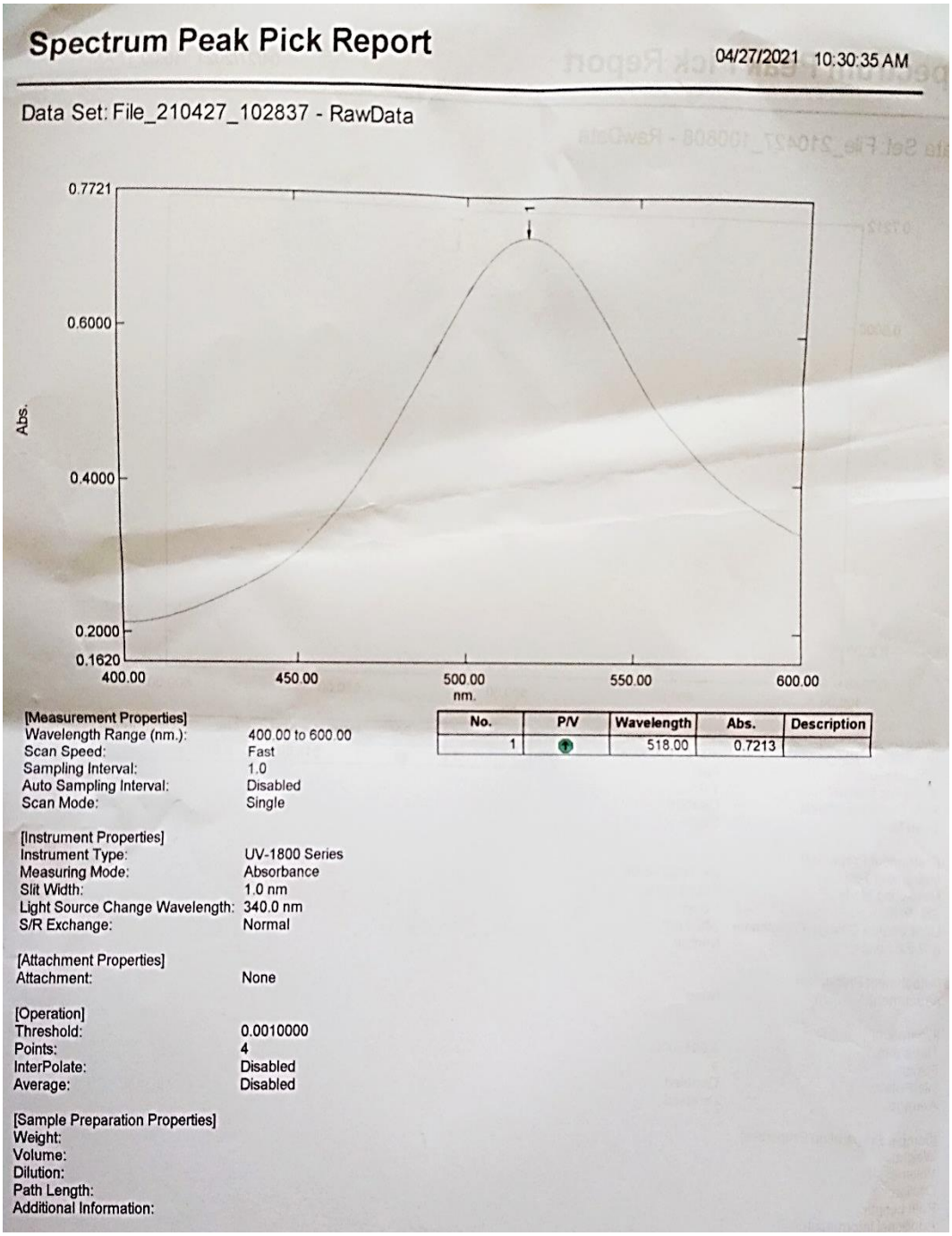
Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{50 \text{ mg}}{50 \text{ ml}}$

$= \frac{50.000 \text{ µg}}{50 \text{ ml}}$

= 1.000 ppm

Lampiran 22. Penentuan panjang gelombang DPPH



Lampiran 23. Pembuatan larutan induk

Pembuatan larutan induk vitamin C

Massa vitamin C = 10 mg

Etanol pro *analysis* = ad labu tentukur 100 mL

Konsentrasi $= \frac{\mathbf{10\ mg}}{\mathbf{100\ ml}}$

$= \frac{\mathbf{10.000\ \mu g}}{\mathbf{100\ ml}}$

= 100 ppm

Pembuatan larutan induk ekstrak etanol 70 % buah mengkudu

Massa ekstrak = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{\mathbf{50\ mg}}{\mathbf{50\ ml}}$

$= \frac{\mathbf{50.000\ \mu g}}{\mathbf{50\ ml}}$

= 1.000 ppm

Pembuatan larutan induk emulgel “X” dari *skin care* di Yogyakarta

Massa emulgel “X” = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{\mathbf{50\ mg}}{\mathbf{50\ ml}}$

$= \frac{\mathbf{50.000\ \mu g}}{\mathbf{50\ ml}}$

= 1.000 ppm

Pembuatan larutan induk formula I

Massa formula I = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{\mathbf{50\ mg}}{\mathbf{50\ ml}}$

$= \frac{\mathbf{50.000\ \mu g}}{\mathbf{50\ ml}}$

= 1.000 ppm

Pembuatan larutan induk formula II

Massa formula II = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{\mathbf{50\ mg}}{\mathbf{50\ ml}}$

$= \frac{\mathbf{50.000\ \mu g}}{\mathbf{50\ ml}}$

= 1.000 ppm

Pembuatan larutan induk formula III

Massa formula III = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{\mathbf{50\ mg}}{\mathbf{50\ ml}}$

$= \frac{\mathbf{50.000\ \mu g}}{\mathbf{50\ ml}}$

= 1.000 ppm

Pembuatan larutan induk kontrol positif formula I

Massa formula KP I = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{\mathbf{50\ mg}}{\mathbf{50\ ml}}$

$= \frac{\mathbf{50.000\ \mu g}}{\mathbf{50\ ml}}$

= 1.000 ppm

Pembuatan larutan induk kontrol positif formula II

Massa formula KP II = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{\mathbf{50\ mg}}{\mathbf{50\ ml}}$

$= \frac{\mathbf{50.000\ \mu g}}{\mathbf{50\ ml}}$

= 1.000 ppm

Pembuatan larutan induk kontrol positif formula III

Massa formula KP I = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{\mathbf{50\ mg}}{\mathbf{50\ ml}}$

$$= \frac{\mathbf{50.000\ \mu g}}{\mathbf{50\ ml}}$$

= 1.000 ppm

Pembuatan larutan induk kontrol negatif formula I

Massa formula KN I = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{\mathbf{50\ mg}}{\mathbf{50\ ml}}$

$= \frac{\mathbf{50.000\ \mu g}}{\mathbf{50\ ml}}$

= 1.000 ppm

Pembuatan larutan induk kontrol negatif formula II

Massa formula KN II = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

Konsentrasi $= \frac{\mathbf{50\ mg}}{\mathbf{50\ ml}}$

$= \frac{\mathbf{50.000\ \mu g}}{\mathbf{50\ ml}}$

= 1.000 ppm

Pembuatan larutan induk kontrol negatif formula III

Massa formula KN III = 50 mg

Etanol pro *analysis* = ad labu tentukur 50 mL

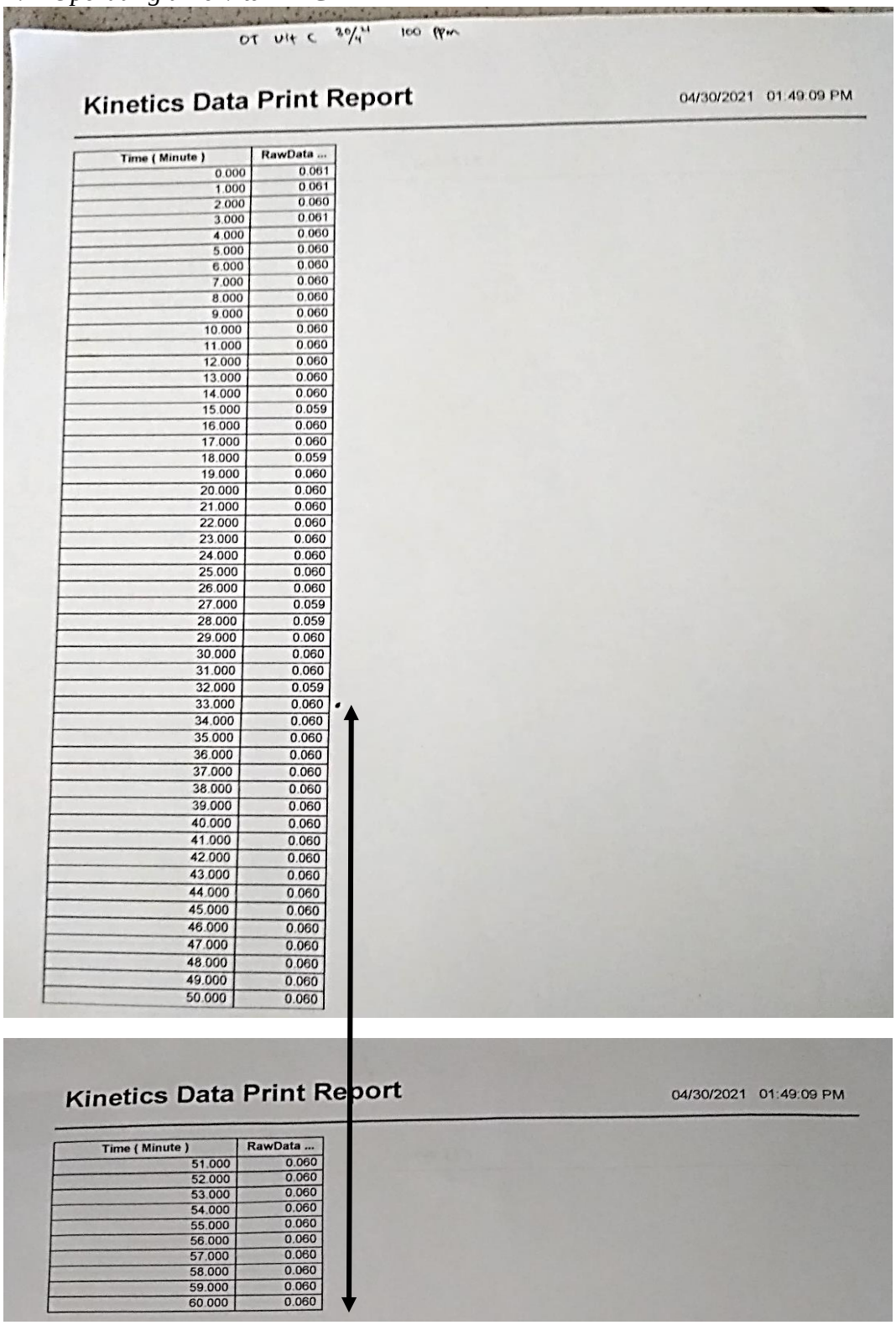
Konsentrasi $= \frac{\mathbf{50\ mg}}{\mathbf{50\ ml}}$

$= \frac{\mathbf{50.000\ \mu g}}{\mathbf{50\ ml}}$

= 1.000 ppm

Lampiran 24. ***Operating time***

1. *Operating time* vitamin C



OT vit C 30/4 100 ppm

Kinetics Data Print Report 04/30/2021 01:49:09 PM

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41.000	0.060
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49.000	0.060
50.000	0.060

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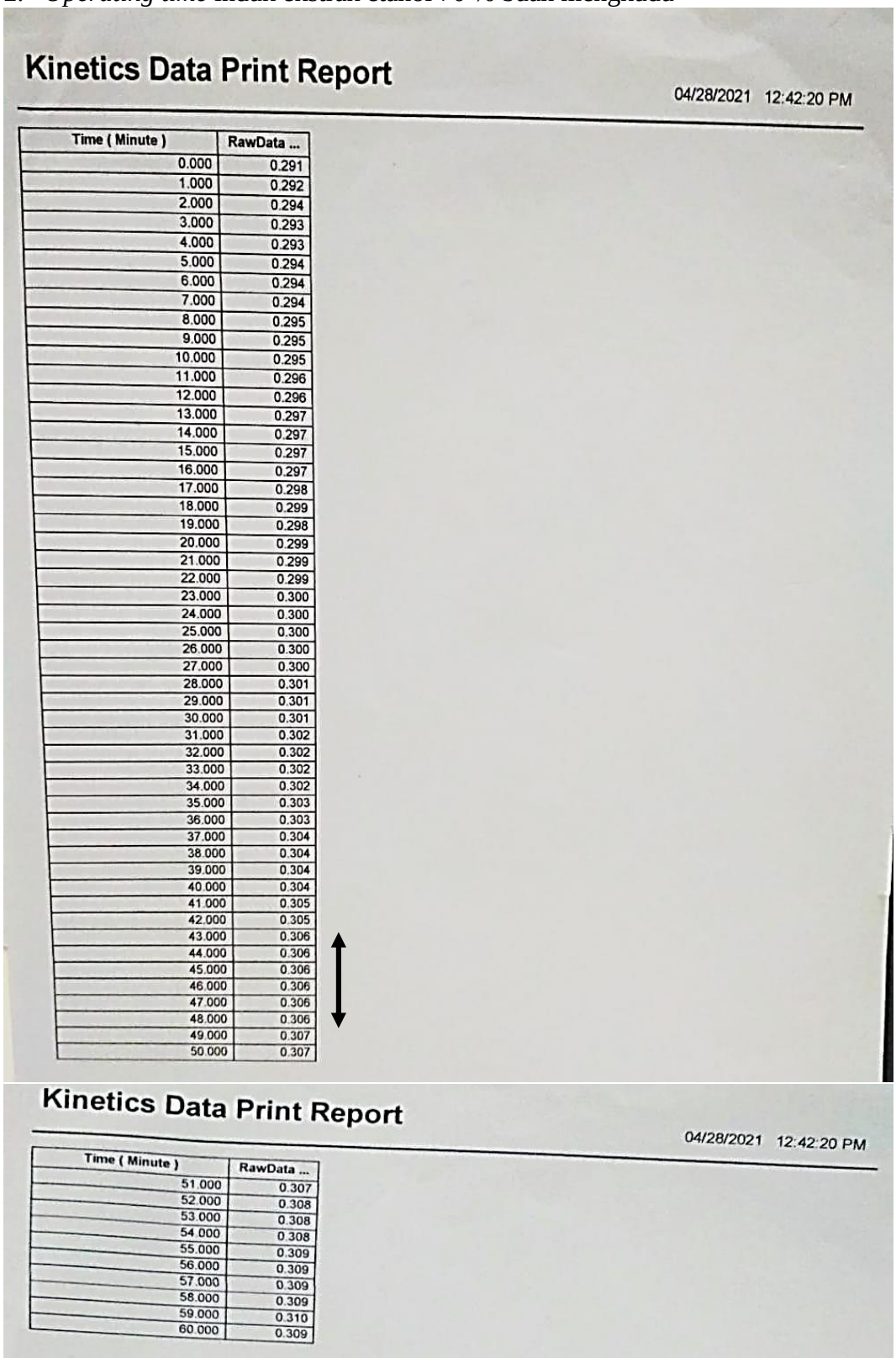
60.000	0.060

2. *Operating time* induk ekstrak etanol 70 % buah mengkudu



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13.000	0.297
14.000	0.297
15.000	0.297
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17.000	0.298
18.000	0.299
19.000	0.298
20.000	0.299
21.000	0.299
22.000	0.299
23.000	0.300
24.000	0.300
25.000	0.300
26.000	0.300
27.000	0.300
28.000	0.301
29.000	0.301
30.000	0.301
31.000	0.302
32.000	0.302
33.000	0.302
34.000	0.302
35.000	0.303
36.000	0.303
37.000	0.304
38.000	0.304
39.000	0.304
40.000	0.304
41.000	0.305
42.000	0.305
43.000	0.306
44.000	0.306
45.000	0.306
46.000	0.306
47.000	0.306
48.000	0.306
49.000	0.307
50.000	0.307

Kinetics Data Print Report

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Time (Minute)	RawData ...
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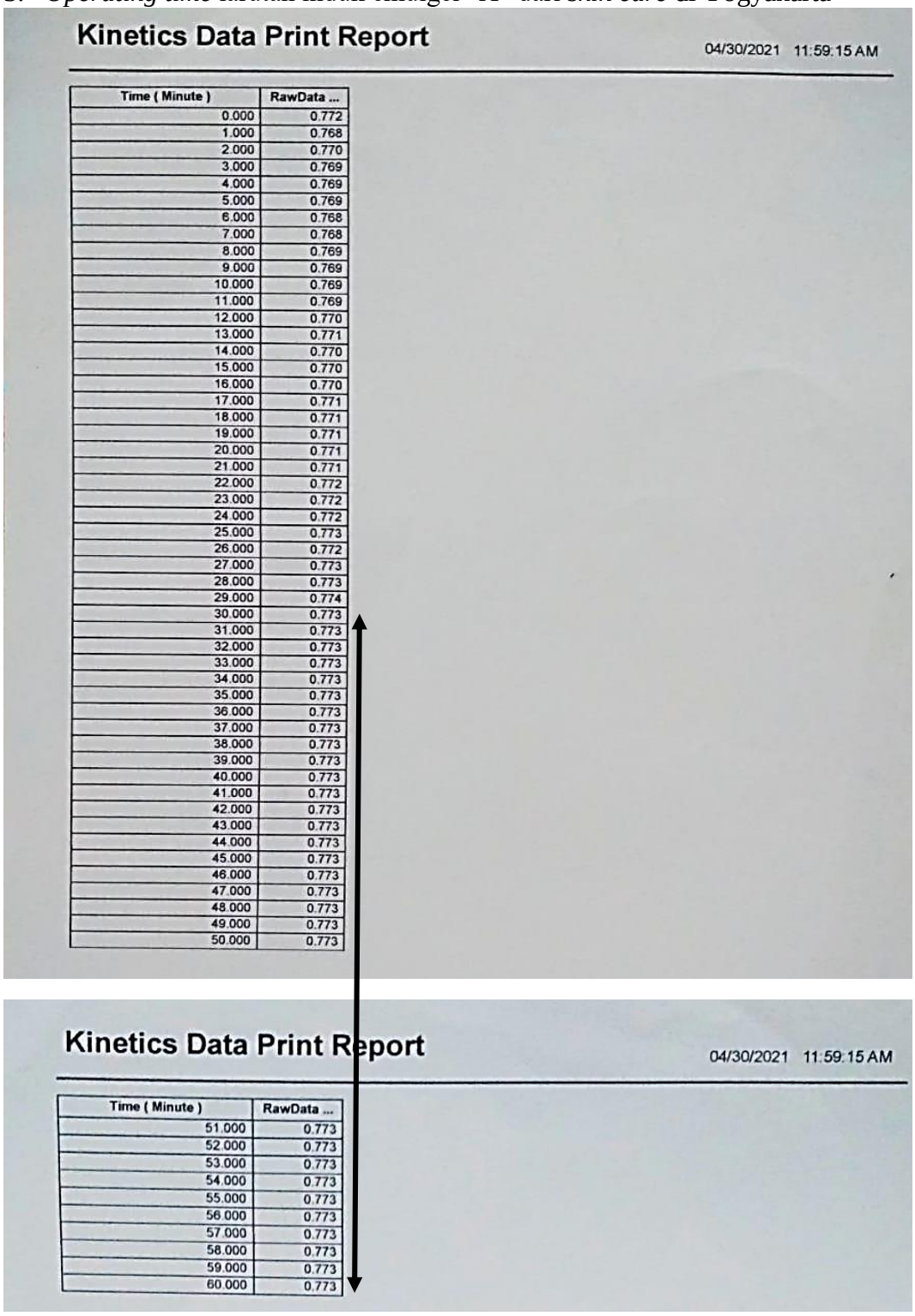
57.000	0.309
58.000	0.309
59.000	0.310
60.000	0.309

3. *Operating time* larutan induk emulgel "X" dari *skin care* di Yogyakarta



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7.000	0.768
8.000	0.769
9.000	0.769
10.000	0.769
11.000	0.769
12.000	0.770
13.000	0.771
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15.000	0.770
16.000	0.770
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31.000	0.773
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33.000	0.773
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35.000	0.773
36.000	0.773
37.000	0.773
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41.000	0.773
42.000	0.773
43.000	0.773
44.000	0.773
45.000	0.773
46.000	0.773
47.000	0.773
48.000	0.773
49.000	0.773
50.000	0.773

Kinetics Data Print Report

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Time (Minute)	RawData ...
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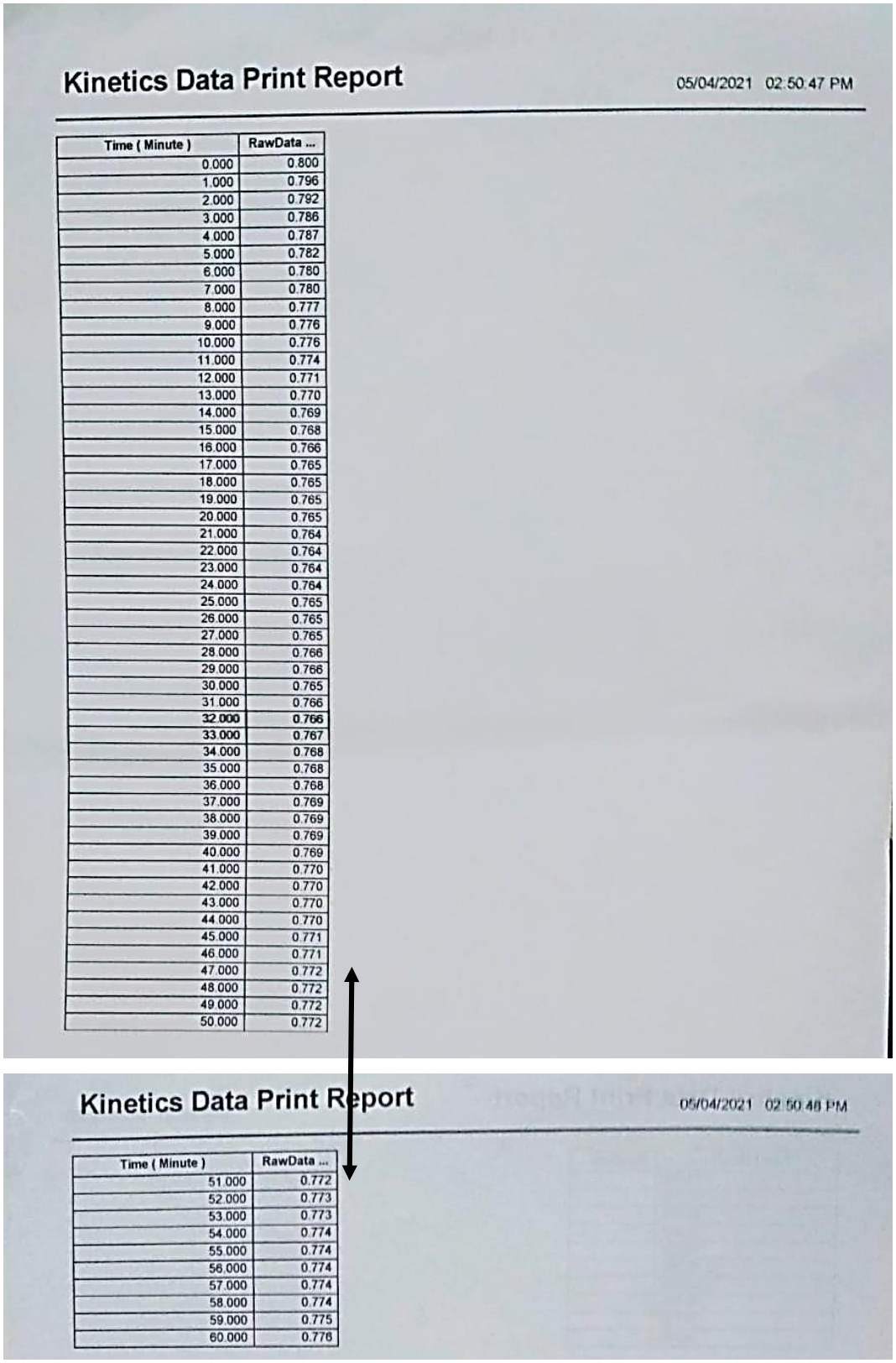
58.000	0.773
59.000	0.773
60.000	0.773

4. *Operating time* larutan induk formula I



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7.000	0.780
8.000	0.777
9.000	0.776
10.000	0.776
11.000	0.774
12.000	0.771
13.000	0.770
14.000	0.769
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24.000	0.764
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26.000	0.765
27.000	0.765
28.000	0.766
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30.000	0.765
31.000	0.766
32.000	0.766
33.000	0.767
34.000	0.768
35.000	0.768
36.000	0.768
37.000	0.769
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41.000	0.770
42.000	0.770
43.000	0.770
44.000	0.770
45.000	0.771
46.000	0.771
47.000	0.772
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50.000	0.772

Kinetics Data Print Report

05/04/2021 02:50:48 PM

Time (Minute)	RawData ...
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55.000	0.774
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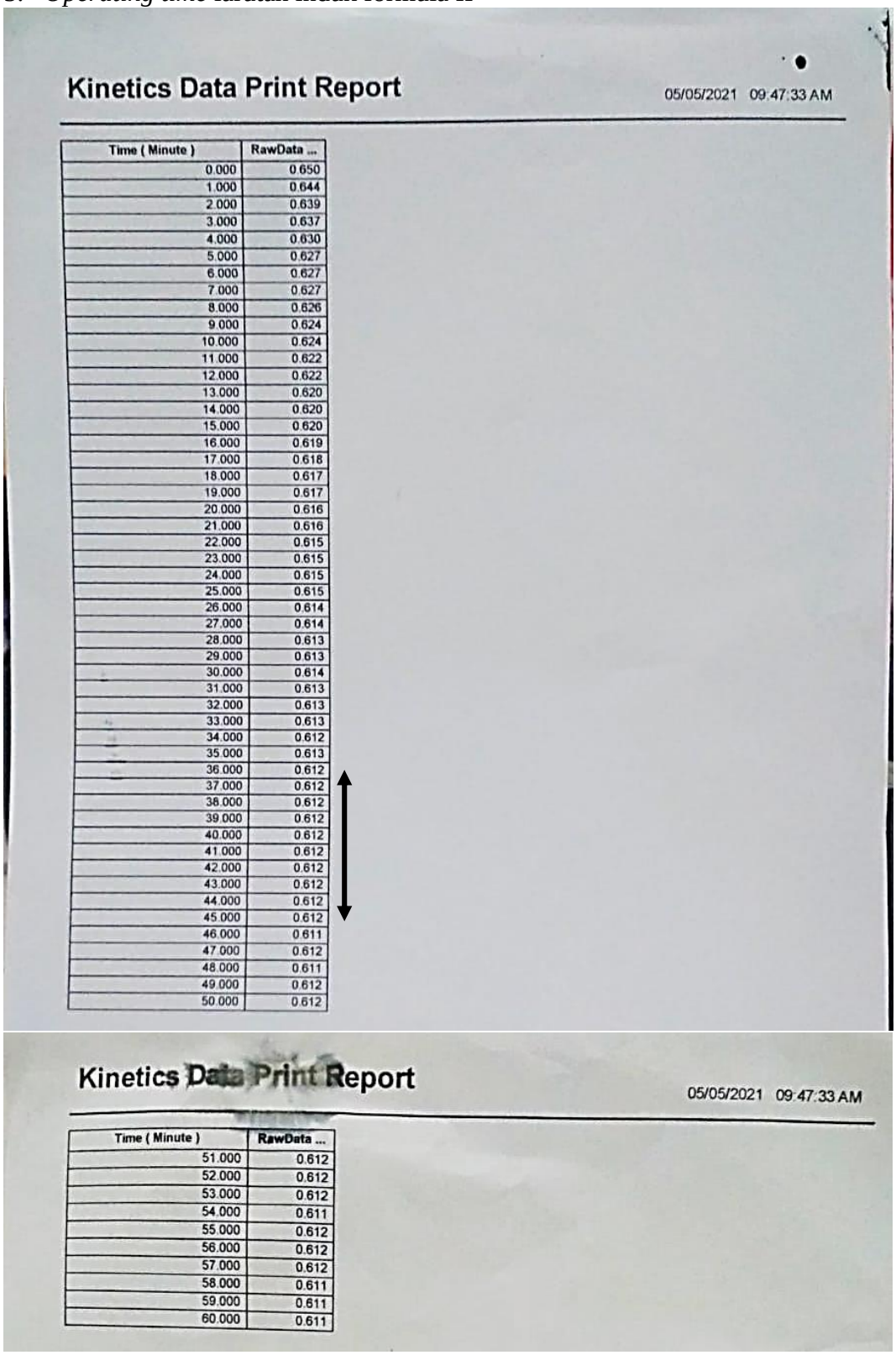
60.000	0.776

5. *Operating time* larutan induk formula II



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05/05/2021 09:47:33 AM

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7.000	0.627
8.000	0.626
9.000	0.624
10.000	0.624
11.000	0.622
12.000	0.622
13.000	0.620
14.000	0.620
15.000	0.620
16.000	0.619
17.000	0.618
18.000	0.617
19.000	0.617
20.000	0.616
21.000	0.616
22.000	0.615
23.000	0.615
24.000	0.615
25.000	0.615
26.000	0.614
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35.000	0.613
36.000	0.612
37.000	0.612
38.000	0.612
39.000	0.612
40.000	0.612
41.000	0.612
42.000	0.612
43.000	0.612
44.000	0.612
45.000	0.612
46.000	0.611
47.000	0.612
48.000	0.611
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50.000	0.612

Kinetics Data Print Report

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Time (Minute)	RawData ...
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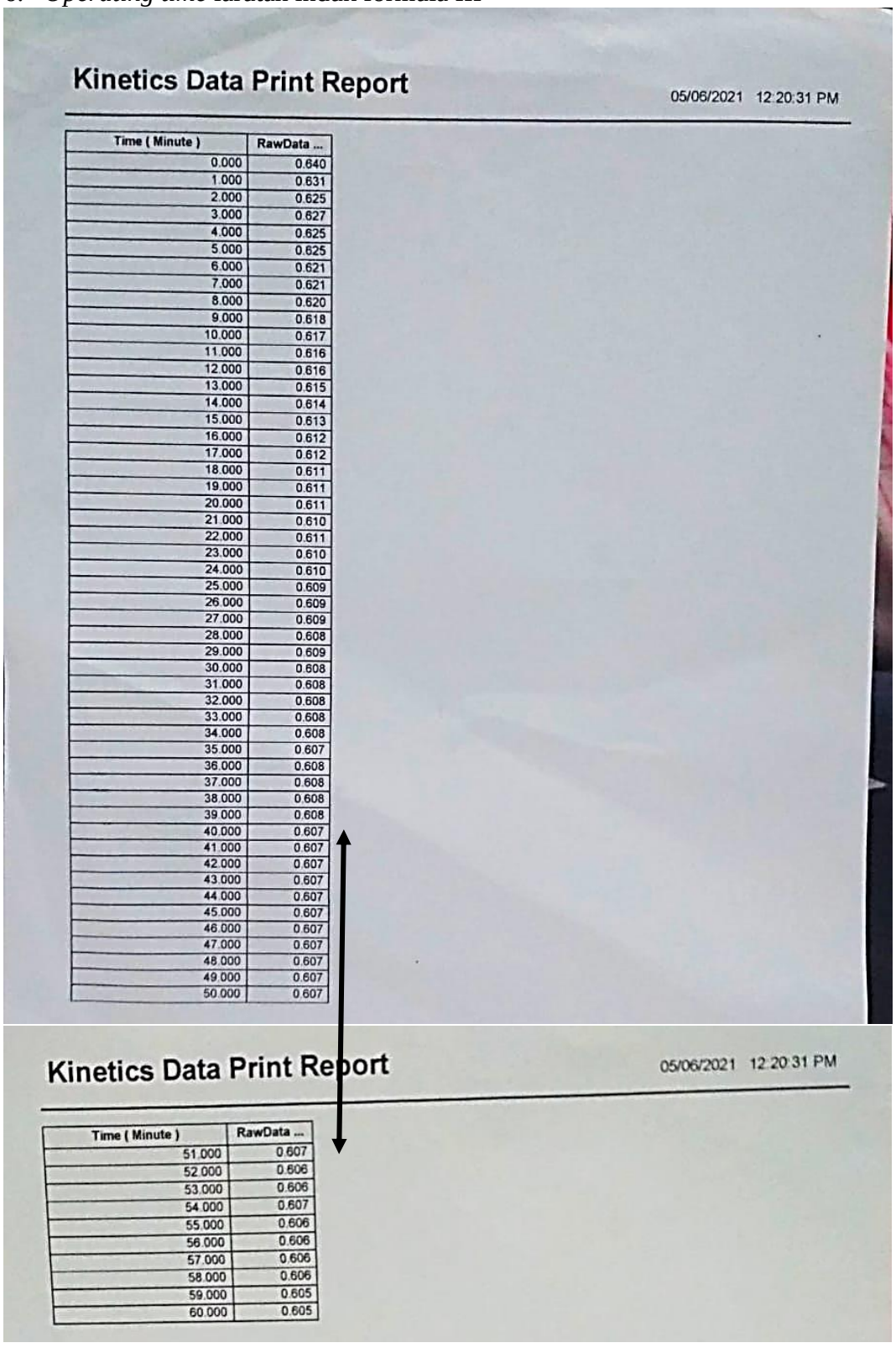
58.000	0.611
59.000	0.611
60.000	0.611

6. *Operating time* larutan induk formula III



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05/06/2021 12:20:31 PM

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7.000	0.621
8.000	0.620
9.000	0.618
10.000	0.617
11.000	0.616
12.000	0.616
13.000	0.615
14.000	0.614
15.000	0.613
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40.000	0.607
41.000	0.607
42.000	0.607
43.000	0.607
44.000	0.607
45.000	0.607
46.000	0.607
47.000	0.607
48.000	0.607
49.000	0.607
50.000	0.607

Kinetics Data Print Report

05/06/2021 12:20:31 PM

Time (Minute)	RawData ...
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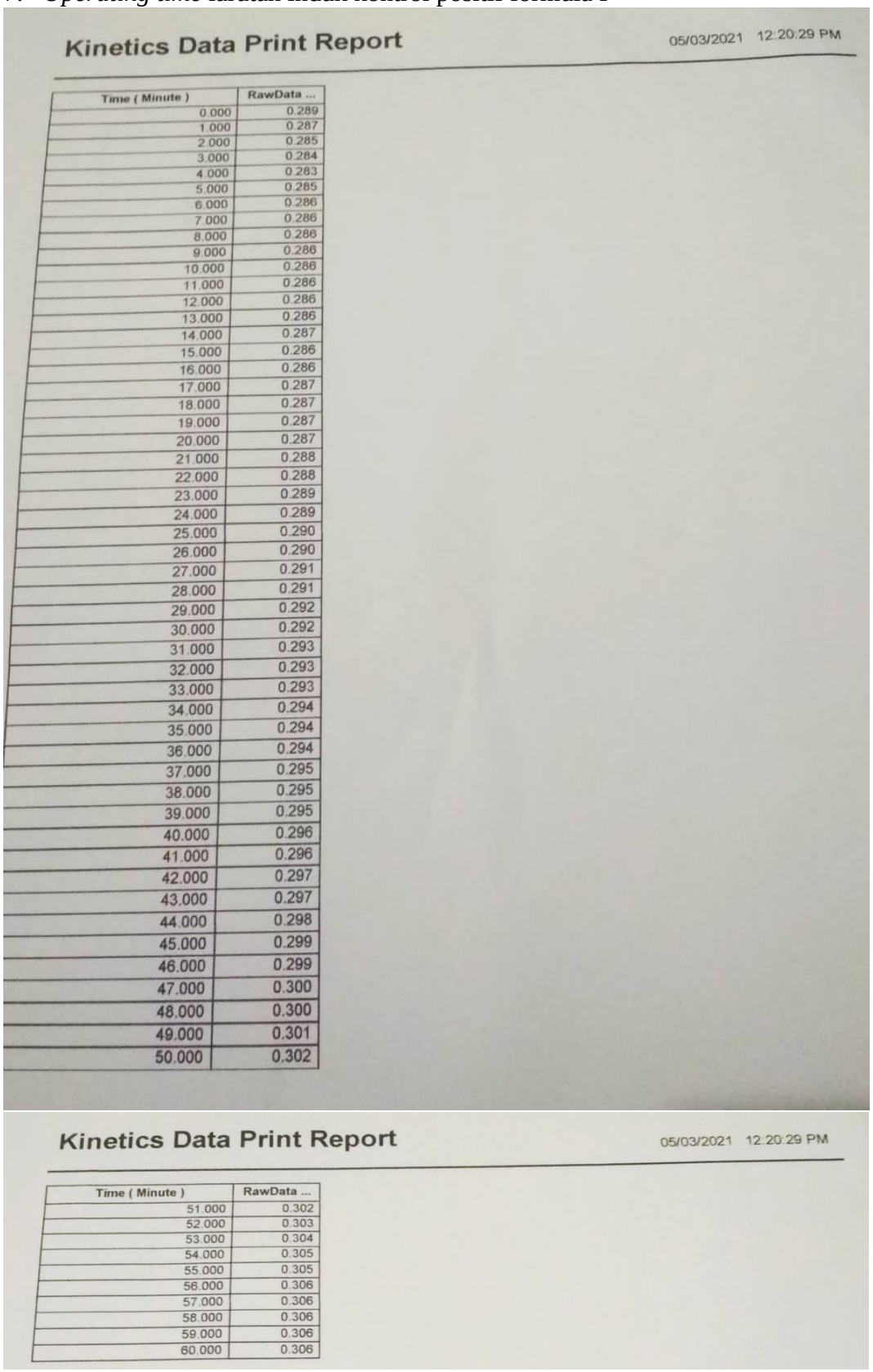
52.000	0.606
53.000	0.606
54.000	0.607
55.000	0.606
56.000	0.606
57.000	0.606
58.000	0.606
59.000	0.605
60.000	0.605

7. *Operating time* larutan induk kontrol positif formula I



Kinetics Data Print Report

05/03/2021 12:20:29 PM

Time (Minute)	RawData ...
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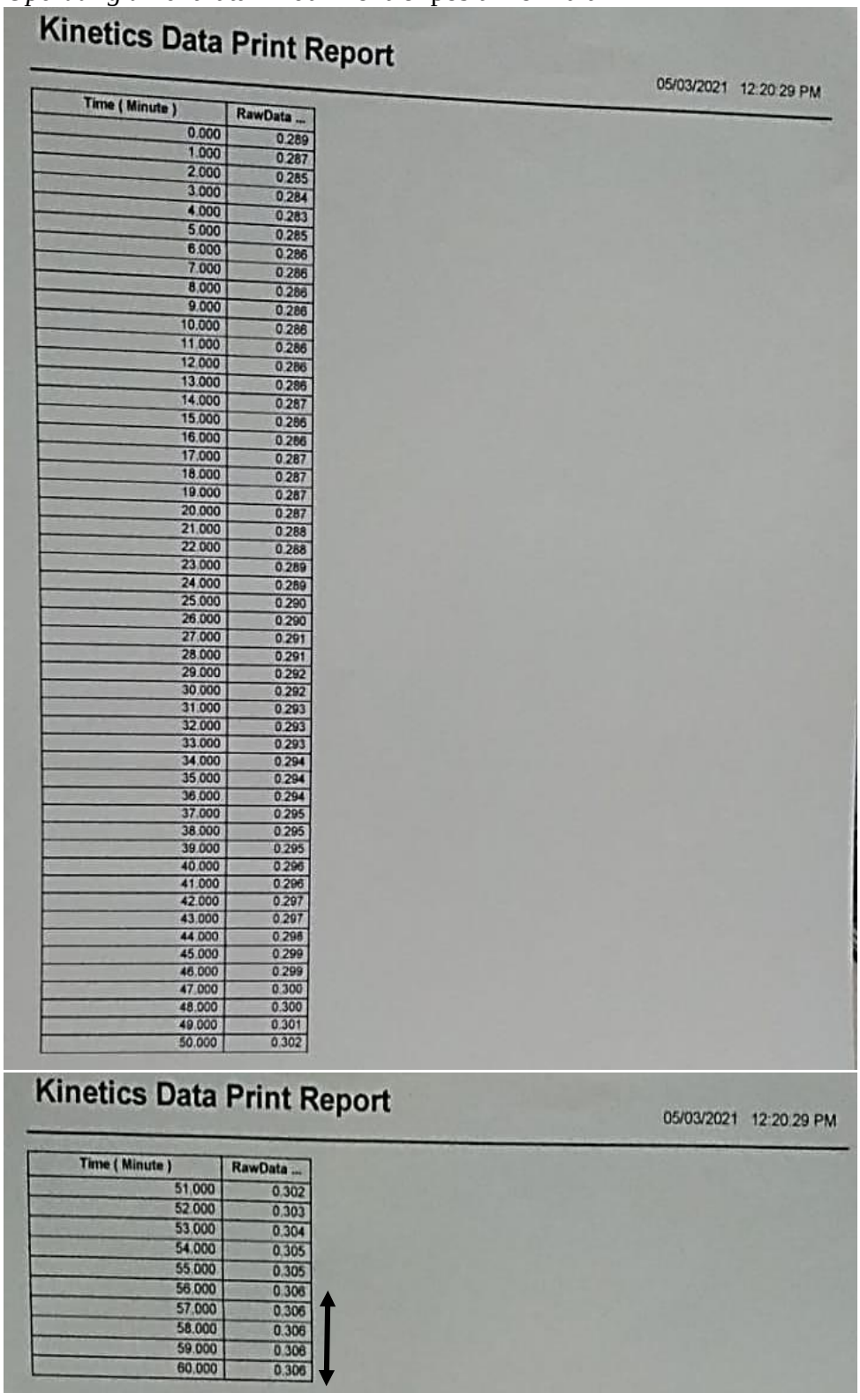
2.000	0.285
3.000	0.284
4.000	0.283
5.000	0.285
6.000	0.286
7.000	0.286
8.000	0.286
9.000	0.286
10.000	0.286
11.000	0.286
12.000	0.286
13.000	0.286
14.000	0.287
15.000	0.286
16.000	0.286
17.000	0.287
18.000	0.287
19.000	0.287
20.000	0.287
21.000	0.288
22.000	0.288
23.000	0.289
24.000	0.289
25.000	0.290
26.000	0.290
27.000	0.291
28.000	0.291
29.000	0.292
30.000	0.292
31.000	0.293
32.000	0.293
33.000	0.293
34.000	0.294
35.000	0.294
36.000	0.294
37.000	0.295
38.000	0.295
39.000	0.295
40.000	0.296
41.000	0.296
42.000	0.297
43.000	0.297
44.000	0.298
45.000	0.299
46.000	0.299
47.000	0.300
48.000	0.300
49.000	0.301
50.000	0.302

Kinetics Data Print Report

05/03/2021 12:20:29 PM

Time (Minute)	RawData ...
51.000	0.302
52.000	0.303
53.000	0.304
54.000	0.305
55.000	0.305
56.000	0.306
57.000	0.306
58.000	0.306
59.000	0.306
60.000	0.306

8. *Operating time* larutan induk kontrol positif formula II



Kinetics Data Print Report

05/03/2021 12:20:29 PM

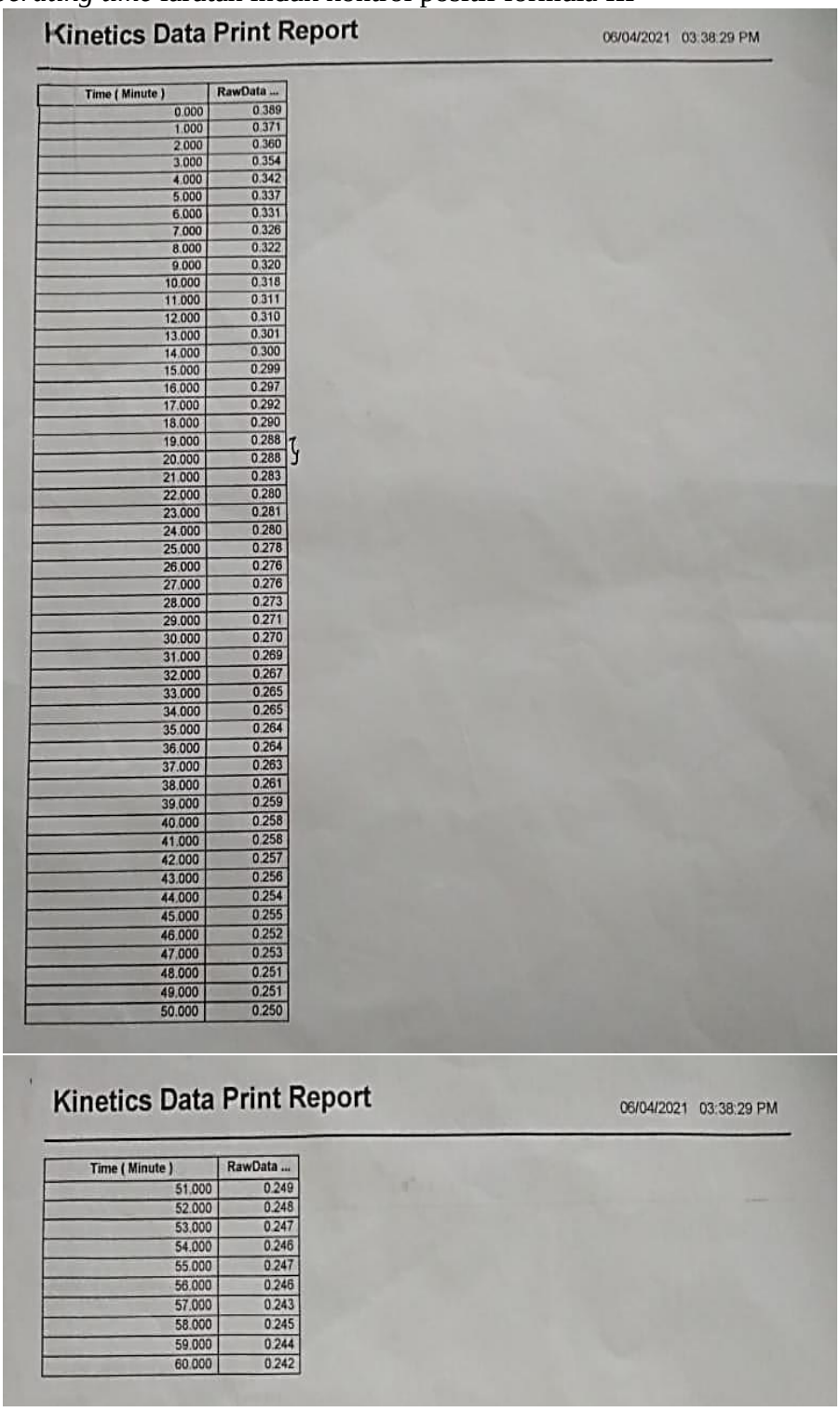
Time (Minute)	RawData ...
0.000	0.289
1.000	0.287
2.000	0.285
3.000	0.284
4.000	0.283
5.000	0.285
6.000	0.286
7.000	0.286
8.000	0.286
9.000	0.286
10.000	0.286
11.000	0.286
12.000	0.286
13.000	0.286
14.000	0.287
15.000	0.286
16.000	0.286
17.000	0.287
18.000	0.287
19.000	0.287
20.000	0.287
21.000	0.288
22.000	0.288
23.000	0.289
24.000	0.289
25.000	0.290
26.000	0.290
27.000	0.291
28.000	0.291
29.000	0.292
30.000	0.292
31.000	0.293
32.000	0.293
33.000	0.293
34.000	0.294
35.000	0.294
36.000	0.294
37.000	0.295
38.000	0.295
39.000	0.295
40.000	0.296
41.000	0.296
42.000	0.297
43.000	0.297
44.000	0.298
45.000	0.299
46.000	0.299
47.000	0.300
48.000	0.300
49.000	0.301
50.000	0.302

Kinetics Data Print Report

05/03/2021 12:20:29 PM

Time (Minute)	RawData ...
51.000	0.302
52.000	0.303
53.000	0.304
54.000	0.305
55.000	0.305
56.000	0.306
57.000	0.306
58.000	0.306
59.000	0.306
60.000	0.306

9. *Operating time* larutan induk kontrol positif formula III



Kinetics Data Print Report

06/04/2021 03:38:29 PM

Time (Minute)	RawData ...
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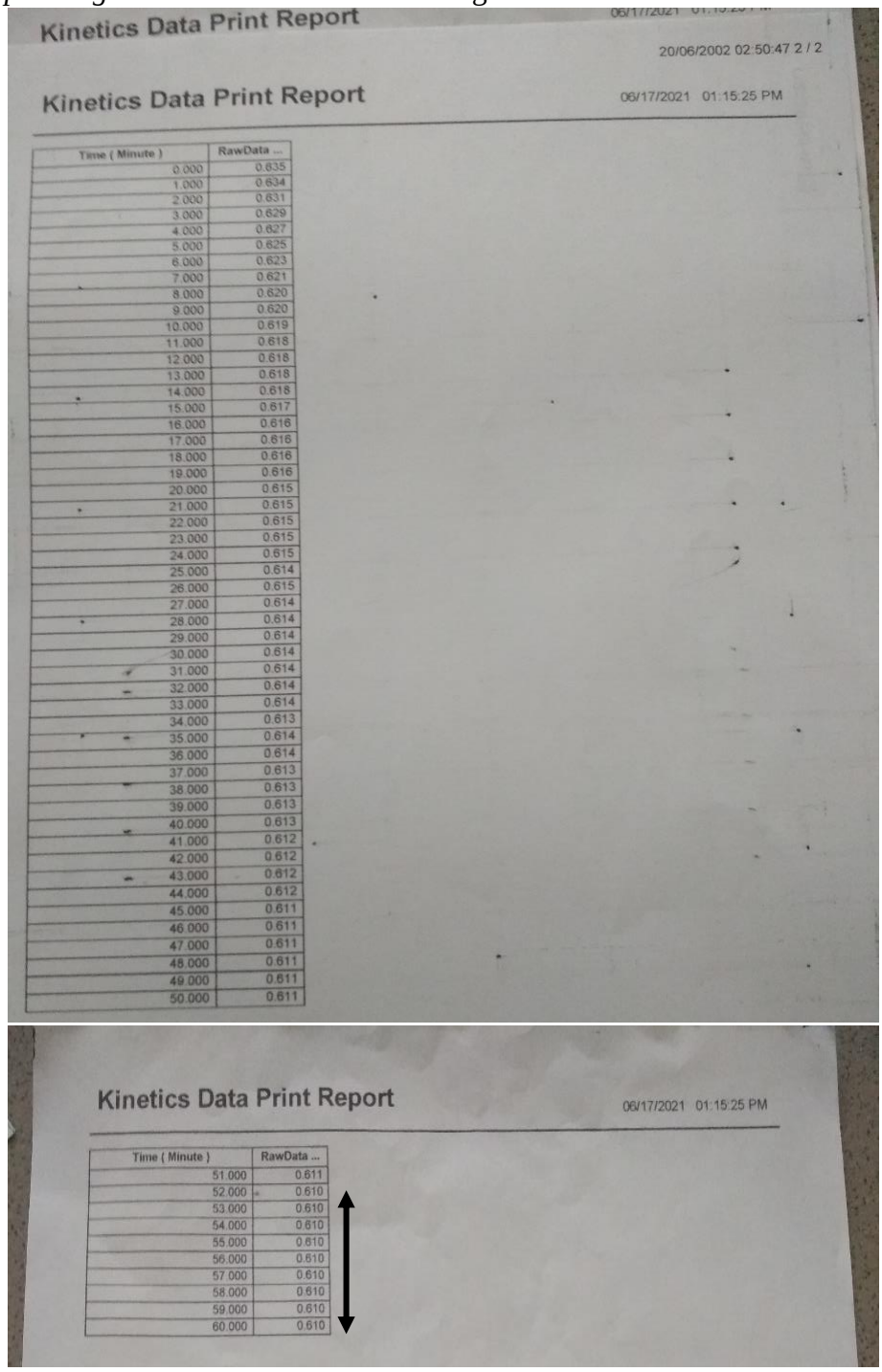
2.000	0.360
3.000	0.354
4.000	0.342
5.000	0.337
6.000	0.331
7.000	0.326
8.000	0.322
9.000	0.320
10.000	0.318
11.000	0.311
12.000	0.310
13.000	0.301
14.000	0.300
15.000	0.299
16.000	0.297
17.000	0.292
18.000	0.290
19.000	0.288
20.000	0.288
21.000	0.283
22.000	0.280
23.000	0.281
24.000	0.280
25.000	0.278
26.000	0.276
27.000	0.276
28.000	0.273
29.000	0.271
30.000	0.270
31.000	0.269
32.000	0.267
33.000	0.265
34.000	0.265
35.000	0.264
36.000	0.264
37.000	0.263
38.000	0.261
39.000	0.259
40.000	0.258
41.000	0.258
42.000	0.257
43.000	0.256
44.000	0.254
45.000	0.255
46.000	0.252
47.000	0.253
48.000	0.251
49.000	0.251
50.000	0.250

Kinetics Data Print Report

06/04/2021 03:38:29 PM

Time (Minute)	RawData ...
51.000	0.249
52.000	0.248
53.000	0.247
54.000	0.246
55.000	0.247
56.000	0.246
57.000	0.243
58.000	0.245
59.000	0.244
60.000	0.242

10. *Operating time* larutan induk kontrol negatif formula I



Kinetics Data Print Report

20/06/2002 02:50:47 2 / 2

Kinetics Data Print Report

06/17/2021 01:15:25 PM

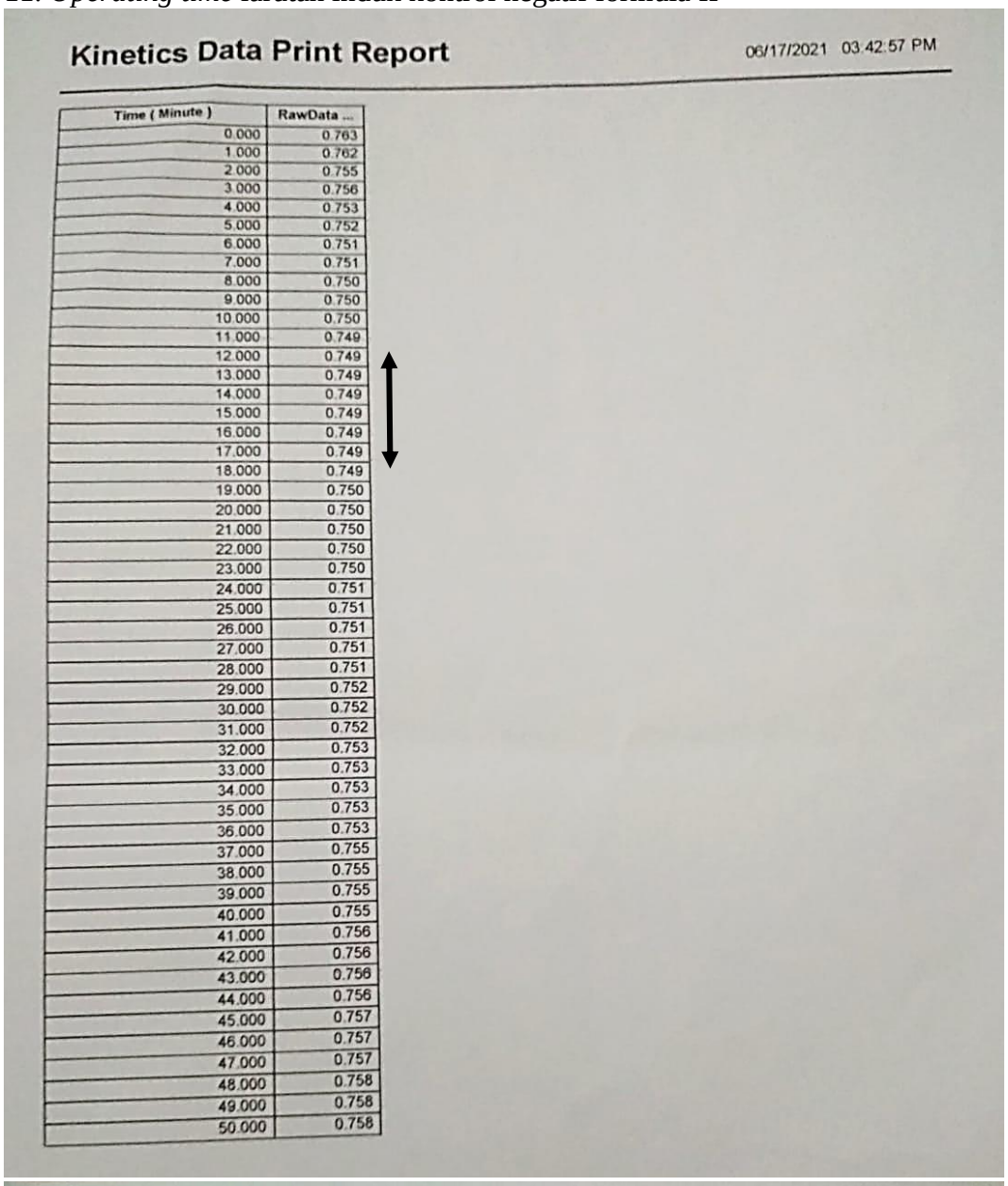
Time (Minute)	RawData ...
0.000	0.635
1.000	0.634
2.000	0.631
3.000	0.629
4.000	0.627
5.000	0.625
6.000	0.623
7.000	0.621
8.000	0.620
9.000	0.620
10.000	0.619
11.000	0.618
12.000	0.618
13.000	0.618
14.000	0.618
15.000	0.617
16.000	0.616
17.000	0.616
18.000	0.616
19.000	0.616
20.000	0.615
21.000	0.615
22.000	0.615
23.000	0.615
24.000	0.615
25.000	0.614
26.000	0.615
27.000	0.614
28.000	0.614
29.000	0.614
30.000	0.614
31.000	0.614
32.000	0.614
33.000	0.614
34.000	0.613
35.000	0.614
36.000	0.614
37.000	0.613
38.000	0.613
39.000	0.613
40.000	0.613
41.000	0.612
42.000	0.612
43.000	0.612
44.000	0.612
45.000	0.611
46.000	0.611
47.000	0.611
48.000	0.611
49.000	0.611
50.000	0.611

Kinetics Data Print Report

06/17/2021 01:15:25 PM

Time (Minute)	RawData ...
51.000	0.611
52.000	0.610
53.000	0.610
54.000	0.610
55.000	0.610
56.000	0.610
57.000	0.610
58.000	0.610
59.000	0.610
60.000	0.610

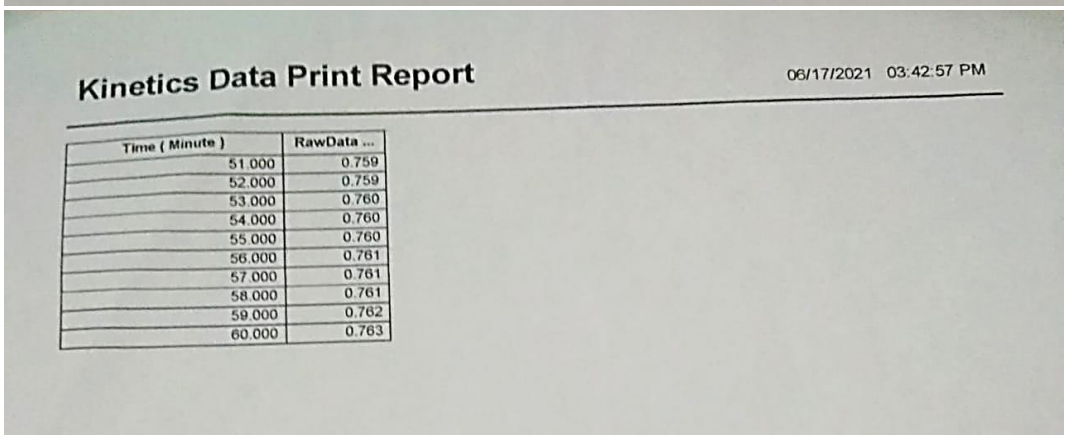
11. *Operating time* larutan induk kontrol negatif formula II



Kinetics Data Print Report

06/17/2021 03:42:57 PM

Time (Minute)	RawData ...
0.000	0.763
1.000	0.762
2.000	0.755
3.000	0.756
4.000	0.753
5.000	0.752
6.000	0.751
7.000	0.751
8.000	0.750
9.000	0.750
10.000	0.750
11.000	0.749
12.000	0.749
13.000	0.749
14.000	0.749
15.000	0.749
16.000	0.749
17.000	0.749
18.000	0.749
19.000	0.750
20.000	0.750
21.000	0.750
22.000	0.750
23.000	0.750
24.000	0.751
25.000	0.751
26.000	0.751
27.000	0.751
28.000	0.751
29.000	0.752
30.000	0.752
31.000	0.752
32.000	0.753
33.000	0.753
34.000	0.753
35.000	0.753
36.000	0.753
37.000	0.755
38.000	0.755
39.000	0.755
40.000	0.755
41.000	0.756
42.000	0.756
43.000	0.756
44.000	0.756
45.000	0.757
46.000	0.757
47.000	0.757
48.000	0.758
49.000	0.758
50.000	0.758

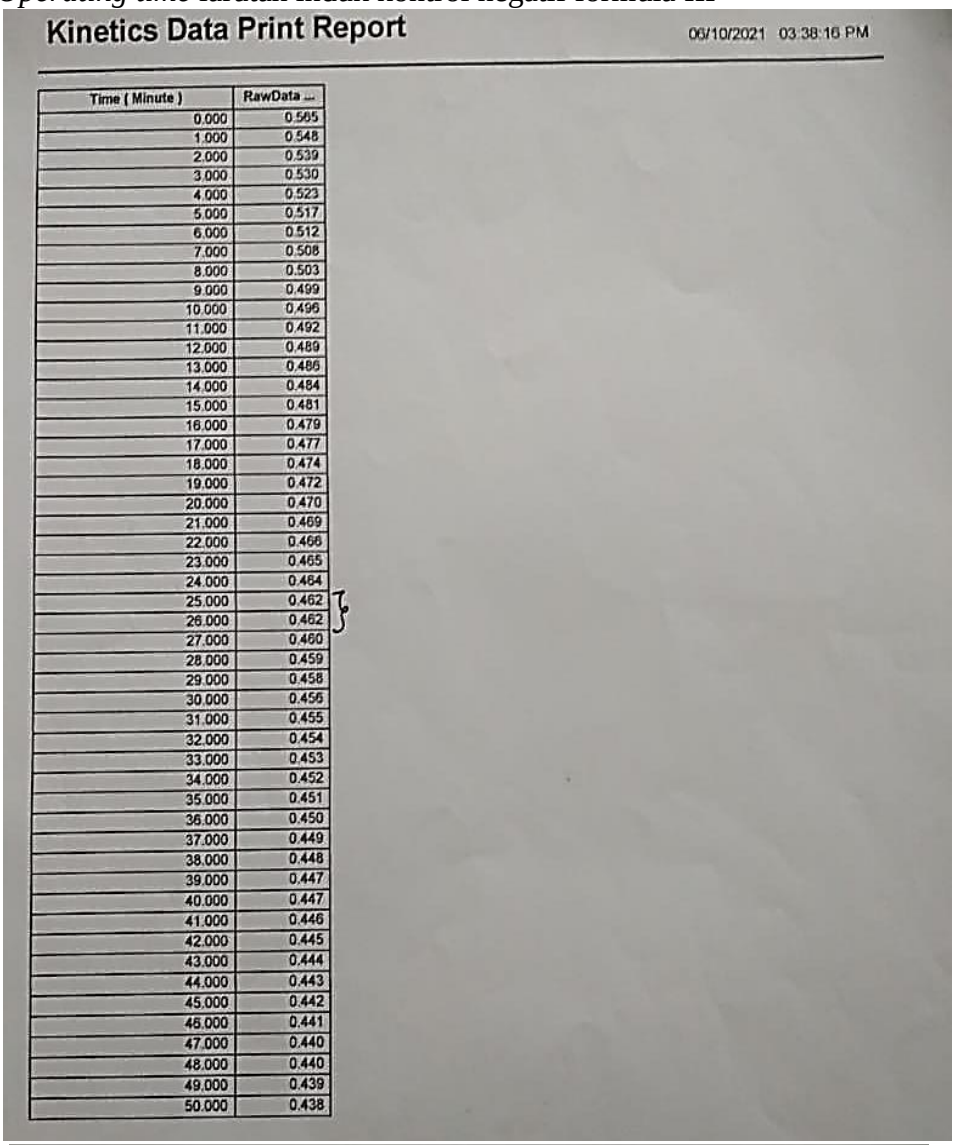


Kinetics Data Print Report

06/17/2021 03:42:57 PM

Time (Minute)	RawData ...
51.000	0.759
52.000	0.759
53.000	0.760
54.000	0.760
55.000	0.760
56.000	0.761
57.000	0.761
58.000	0.761
59.000	0.762
60.000	0.763

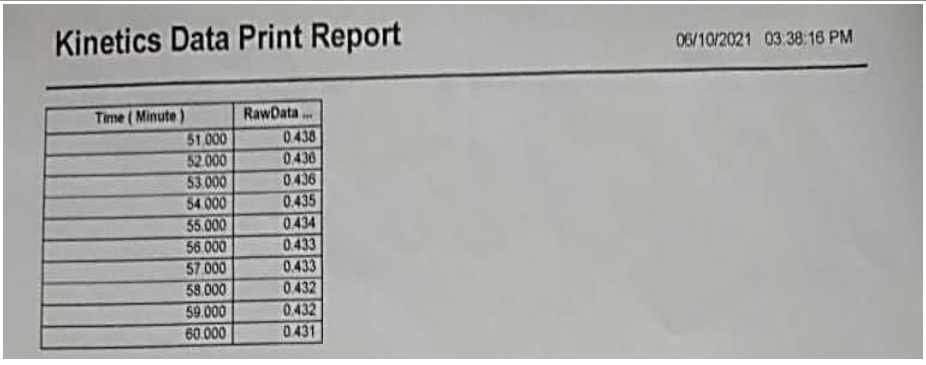
12. *Operating time* larutan induk kontrol negatif formula III



Kinetics Data Print Report

06/10/2021 03:38:16 PM

Time (Minute)	RawData ...
0.000	0.565
1.000	0.548
2.000	0.539
3.000	0.530
4.000	0.523
5.000	0.517
6.000	0.512
7.000	0.508
8.000	0.503
9.000	0.499
10.000	0.496
11.000	0.492
12.000	0.489
13.000	0.486
14.000	0.484
15.000	0.481
16.000	0.479
17.000	0.477
18.000	0.474
19.000	0.472
20.000	0.470
21.000	0.469
22.000	0.466
23.000	0.465
24.000	0.464
25.000	0.462
26.000	0.462
27.000	0.460
28.000	0.459
29.000	0.458
30.000	0.456
31.000	0.455
32.000	0.454
33.000	0.453
34.000	0.452
35.000	0.451
36.000	0.450
37.000	0.449
38.000	0.448
39.000	0.447
40.000	0.447
41.000	0.446
42.000	0.445
43.000	0.444
44.000	0.443
45.000	0.442
46.000	0.441
47.000	0.440
48.000	0.440
49.000	0.439
50.000	0.438



Kinetics Data Print Report

06/10/2021 03:38:16 PM

Time (Minute)	RawData ...
51.000	0.438
52.000	0.436
53.000	0.436
54.000	0.435
55.000	0.434
56.000	0.433
57.000	0.433
58.000	0.432
59.000	0.432
60.000	0.431

Lampiran 25. Pembuatan kurva konsentrasi

Kurva larutan induk vitamin C
Larutan induk vitamin C (C1)= 100 ppm
Pengenceran 1 (5 ppm)

C1	x	V1	=	C2	x	V2
100 ppm	x	V1	=	5 ppm	x	10 mL

$$V1 = \frac{5 \text{ ppm} \times 10 \text{ mL}}{100 \text{ ppm}}$$

V1 = 0,5 mL

Pengenceran 2 (10 ppm)

C1	x	V1	=	C2	x	V2
100 ppm	x	V1	=	10 ppm	x	10 mL

$$V1 = \frac{10 \text{ ppm} \times 10 \text{ mL}}{100 \text{ ppm}}$$

V1 = 1 mL

Pengenceran 3 (15 ppm)

C1	x	V1	=	C2	x	V2
100 ppm	x	V1	=	15 ppm	x	10 mL

$$V1 = \frac{15 \text{ ppm} \times 10 \text{ mL}}{100 \text{ ppm}}$$

V1 = 1,5 mL

Pengenceran 4 (20 ppm)

C1	x	V1	=	C2	x	V2
100 ppm	x	V1	=	20 ppm	x	10 mL

$$V1 = \frac{20 \text{ ppm} \times 10 \text{ mL}}{100 \text{ ppm}}$$

V1 = 2 mL

Pengenceran 5 (25 ppm)

C1	x	V1	=	C2	x	V2
100 ppm	x	V1	=	25 ppm	x	10 mL

$$V1 = \frac{25 \text{ ppm} \times 10 \text{ mL}}{100 \text{ ppm}}$$

V1 = 2,5 mL

Kurva larutan induk ekstrak etanol 70 % buah mengkudu
larutan induk ekstrak etanol 70 % buah mengkudu (C1) = 1.000 ppm
Pengenceran 1 (25 ppm)

C1	x	V1	=	C2	x	V2
1.000 ppm	x	V1	=	25 ppm	x	10 mL

$$V1 = \frac{25 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 0,25 mL

Pengenceran 2 (50 ppm)

C1	x	V1	=	C2	x	V2
1.000 ppm	x	V1	=	50 ppm	x	10 mL

$$V1 = \frac{50 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

$$V1 = 0{,}5 \text{ mL}$$

Pengenceran 3 (75 ppm)

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

$$1.000 \text{ ppm} \times V1 = 75 \text{ ppm} \times 10 \text{ mL}$$

$$V1 = \frac{75 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

$$V1 = 0{,}75 \text{ mL}$$

Pengenceran 4 (100 ppm)

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

$$1.000 \text{ ppm} \times V1 = 100 \text{ ppm} \times 10 \text{ mL}$$

$$V1 = \frac{100 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

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

Pengenceran 5 (125 ppm)

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

$$1.000 \text{ ppm} \times V1 = 125 \text{ ppm} \times 10 \text{ mL}$$

$$V1 = \frac{125 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

$$V1 = 1{,}25 \text{ mL}$$

Kurva larutan induk emulgel "X" dari *skin care* di Yogyakarta

Larutan induk emulgel "X" dari *skin care* di Yogyakarta (C1) = 1.000 ppm

Pengenceran 1 (50 ppm)

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

$$1.000 \text{ ppm} \times V1 = 50 \text{ ppm} \times 10 \text{ mL}$$

$$V1 = \frac{50 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

$$V1 = 0{,}5 \text{ mL}$$

Pengenceran 2 (100 ppm)

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

$$1.000 \text{ ppm} \times V1 = 100 \text{ ppm} \times 10 \text{ mL}$$

$$V1 = \frac{100 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

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

Pengenceran 3 (150 ppm)

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

$$1.000 \text{ ppm} \times V1 = 150 \text{ ppm} \times 10 \text{ mL}$$

$$V1 = \frac{150 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

$$V1 = 1{,}5 \text{ mL}$$

Pengenceran 4 (200 ppm)

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

$$1.000 \text{ ppm} \times V1 = 200 \text{ ppm} \times 10 \text{ mL}$$

$$V1 = \frac{200\ ppm \times 10\ mL}{1.000\ ppm}$$

$$V1 = 2\ mL$$

Pengenceran 5 (250 ppm)

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

$$1.000\ ppm \times V1 = 250\ ppm \times 10\ mL$$

$$V1 = \frac{250\ ppm \times 10\ mL}{1.000\ ppm}$$

$$V1 = 2{,}5\ mL$$

Kurva larutan induk formula I

Larutan induk formula I (C1) = 1.000 ppm

Pengenceran 1 (50 ppm)

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

$$1.000\ ppm \times V1 = 50\ ppm \times 10\ mL$$

$$V1 = \frac{50\ ppm \times 10\ mL}{1.000\ ppm}$$

$$V1 = 0{,}5\ mL$$

Pengenceran 2 (100 ppm)

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

$$1.000\ ppm \times V1 = 100\ ppm \times 10\ mL$$

$$V1 = \frac{100\ ppm \times 10\ mL}{1.000\ ppm}$$

$$V1 = 1\ mL$$

Pengenceran 3 (150 ppm)

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

$$1.000\ ppm \times V1 = 150\ ppm \times 10\ mL$$

$$V1 = \frac{150\ ppm \times 10\ mL}{1.000\ ppm}$$

$$V1 = 1{,}5\ mL$$

Pengenceran 4 (200 ppm)

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

$$1.000\ ppm \times V1 = 200\ ppm \times 10\ mL$$

$$V1 = \frac{200\ ppm \times 10\ mL}{1.000\ ppm}$$

$$V1 = 2\ mL$$

Pengenceran 5 (250 ppm)

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

$$1.000\ ppm \times V1 = 250\ ppm \times 10\ mL$$

$$V1 = \frac{250\ ppm \times 10\ mL}{1.000\ ppm}$$

$$V1 = 2{,}5\ mL$$

Kurva larutan induk formula II

Larutan induk formula II (C1) = 1.000 ppm

Pengenceran 1 (50 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 50 ppm x 10 mL

$$V1 = \frac{50 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 0,5 mL

Pengenceran 2 (100 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 100 ppm x 10 mL

$$V1 = \frac{100 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1 mL

Pengenceran 3 (150 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 150 ppm x 10 mL

$$V1 = \frac{150 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1,5 mL

Pengenceran 4 (200 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 200 ppm x 10 mL

$$V1 = \frac{200 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2 mL

Pengenceran 5 (250 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 250 ppm x 10 mL

$$V1 = \frac{250 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2,5 mL

Kurva larutan induk formula III

Larutan induk formula III (C1) = 1.000 ppm

Pengenceran 1 (50 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 50 ppm x 10 mL

$$V1 = \frac{50 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 0,5 mL

Pengenceran 2 (100 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 100 ppm x 10 mL

$$V1 = \frac{100 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1 mL

Pengenceran 3 (150 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 150 ppm x 10 mL

$$V1 = \frac{150 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1,5 mL

Pengenceran 4 (200 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 200 ppm x 10 mL

$$V1 = \frac{200 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2 mL

Pengenceran 5 (250 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 250 ppm x 10 mL

$$V1 = \frac{250 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2,5 mL

Kurva larutan induk kontrol positif I

Larutan induk formula III (C1) = 1.000 ppm

Pengenceran 1 (50 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 50 ppm x 10 mL

$$V1 = \frac{50 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 0,5 mL

Pengenceran 2 (100 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 100 ppm x 10 mL

$$V1 = \frac{100 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1 mL

Pengenceran 3 (150 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 150 ppm x 10 mL

$$V1 = \frac{150 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1,5 mL

Pengenceran 4 (200 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 200 ppm x 10 mL

$$V1 = \frac{200 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2 mL

Pengenceran 5 (250 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 250 ppm x 10 mL

$$V1 = \frac{250 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2,5 mL

Kurva larutan induk kontrol positif II

Larutan induk formula III (C1) = 1.000 ppm

Pengenceran 1 (50 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 50 ppm x 10 mL

$$V1 = \frac{50 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 0,5 mL

Pengenceran 2 (100 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 100 ppm x 10 mL

$$V1 = \frac{100 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1 mL

Pengenceran 3 (150 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 150 ppm x 10 mL

$$V1 = \frac{150 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1,5 mL

Pengenceran 4 (200 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 200 ppm x 10 mL

$$V1 = \frac{200 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2 mL

Pengenceran 5 (250 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 250 ppm x 10 mL

$$V1 = \frac{250 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2,5 mL

Kurva larutan induk kontrol positif III

Larutan induk formula III (C1) = 1.000 ppm

Pengenceran 1 (50 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 50 ppm x 10 mL

$$V1 = \frac{50 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 0,5 mL

Pengenceran 2 (100 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 100 ppm x 10 mL

$$V1 = \frac{100 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1 mL

Pengenceran 3 (150 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 150 ppm x 10 mL

$$V1 = \frac{150 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1,5 mL

Pengenceran 4 (200 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 200 ppm x 10 mL

$$V1 = \frac{200 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2 mL

Pengenceran 5 (250 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 250 ppm x 10 mL

$$V1 = \frac{250 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2,5 mL

Kurva larutan induk kontrol negatif I

Larutan induk formula III (C1) = 1.000 ppm

Pengenceran 1 (50 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 50 ppm x 10 mL

$$V1 = \frac{50 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 0,5 mL

Pengenceran 2 (100 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 100 ppm x 10 mL

$$V1 = \frac{100 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1 mL

Pengenceran 3 (150 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 150 ppm x 10 mL

$$V1 = \frac{150 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1,5 mL

Pengenceran 4 (200 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 200 ppm x 10 mL

$$V1 = \frac{200 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2 mL

Pengenceran 5 (250 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 250 ppm x 10 mL

$$V1 = \frac{250 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2,5 mL

Kurva larutan induk kontrol negatif II

Larutan induk formula III (C1) = 1.000 ppm

Pengenceran 1 (50 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 50 ppm x 10 mL

$$V1 = \frac{50 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 0,5 mL

Pengenceran 2 (100 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 100 ppm x 10 mL

$$V1 = \frac{100 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1 mL

Pengenceran 3 (150 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 150 ppm x 10 mL

$$V1 = \frac{150 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1,5 mL

Pengenceran 4 (200 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 200 ppm x 10 mL

$$V1 = \frac{200 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2 mL

Pengenceran 5 (250 ppm)

C1 x V1 = C2 x V2

1.000 ppm x V1 = 250 ppm x 10 mL

$$V1 = \frac{250 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2,5 mL

Kurva larutan induk kontrol negatif III
Larutan induk formula III (C1) = 1.000 ppm
Pengenceran 1 (50 ppm)
Pengenceran 1 (50 ppm)

C1 x V1 = C2 x V2
1.000 ppm x V1 = 50 ppm x 10 mL

$$V1 = \frac{50 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 0,5 mL

Pengenceran 2 (100 ppm)

C1 x V1 = C2 x V2
1.000 ppm x V1 = 100 ppm x 10 mL

$$V1 = \frac{100 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1 mL

Pengenceran 3 (150 ppm)

C1 x V1 = C2 x V2
1.000 ppm x V1 = 150 ppm x 10 mL

$$V1 = \frac{150 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 1,5 mL

Pengenceran 4 (200 ppm)

C1 x V1 = C2 x V2
1.000 ppm x V1 = 200 ppm x 10 mL

$$V1 = \frac{200 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2 mL

Pengenceran 5 (250 ppm)

C1 x V1 = C2 x V2
1.000 ppm x V1 = 250 ppm x 10 mL

$$V1 = \frac{250 \text{ ppm} \times 10 \text{ mL}}{1.000 \text{ ppm}}$$

V1 = 2,5 mL

Lampiran 26. Perhitungan nilai IC_{50}

1. Rumus IC_{50} perhitungan microsoft excel
   % Inhibisi = (Abs DPPH- Abs sampel)*100/ Abs DPPH
   a = INTERCEPT (Konsentrasi sampel; Persen inhibisi)
   b = SLOPE (Konsentrasi sampel; Persen inhibisi)
   r = COREL (Konsentrasi sampel; Persen inhibisi)
   IC_{50} = (50-a)/ b

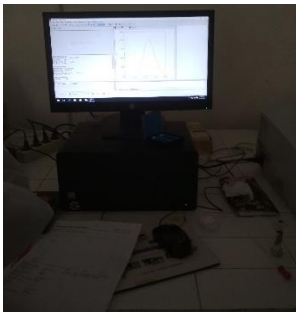
SD = STDEV($IC_{50(1)}$;$IC_{50(2)}$;$IC_{50(3)}$)

Rata-rata IC_{50} = ($IC_{50(1)}$ + $IC_{50(2)}$ + $IC_{50(3)}$)/3

Keterangan = (Abs = Absorbansi)

2. Proses pengujian aktivitas antioksidan

Spektrofotometri UV-Vis

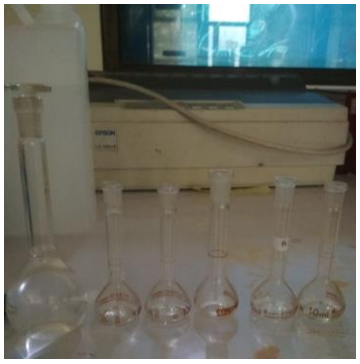


Komputer

Persiapan alat dan bahan uji aktivitas antioksidan

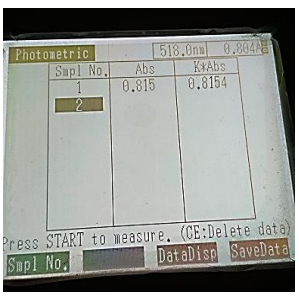
Penimbangan sampel

Membuat larutan induk



Pembuatan kurva baku

Melakukan replikasi sampel



Pembacaan absorbansi DPPH

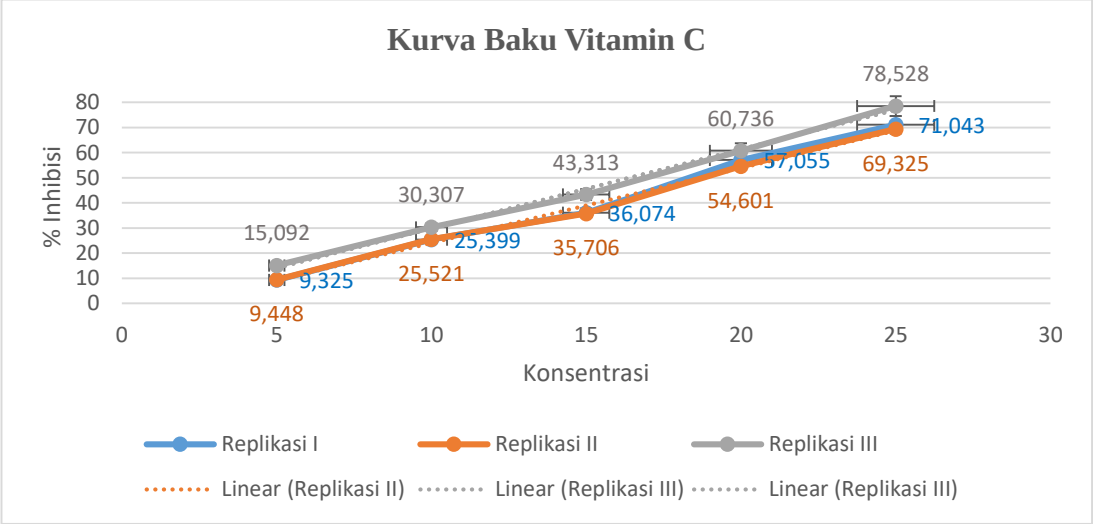
Pembacaan absorbansi sampel

Sampel emulgel produk *skin care* dari kota Yogyakarta

Persiapan dan pengambilan sampel uji dalam labu takar gelap

3. Hasil perhitungan nilai IC_{50} vitamin C

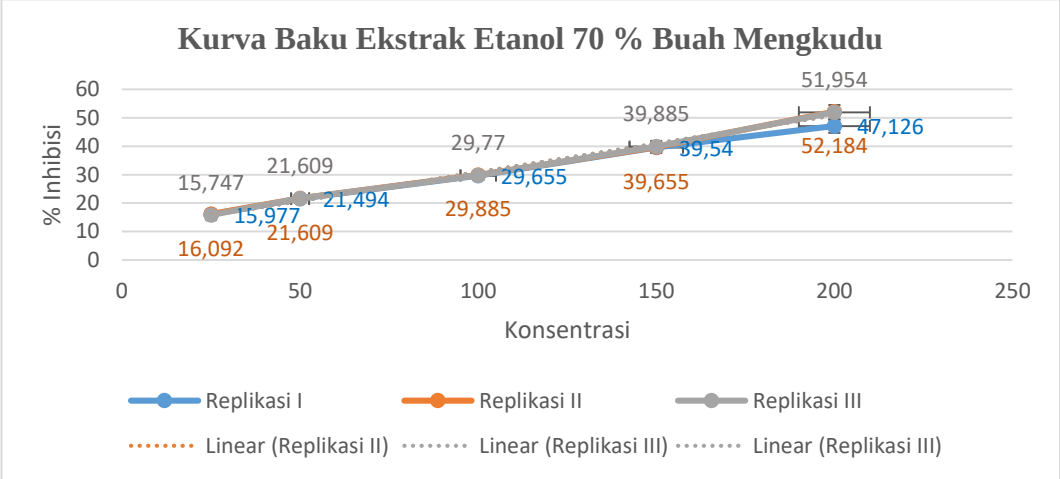
Replikasi	Konsentrasi (µg/mL)	Absorbansi DPPH	Absorbansi sampel	% Inhibisi	a	b	r	IC_{50} (µg/mL)	Rata-rata IC_{50} (µg/mL)
I	5	0,815	0,739	9,325	-6,748	3,102	0,996	18,295	
	10	0,815	0,608	25,399					
	15	0,815	0,521	36,074					
	20	0,815	0,350	57,055					
	25	0,815	0,236	71,043					
II	5	0,815	0,738	9,448	-5,730	2,977	0,997	18,722	
	10	0,815	0,607	25,521					17,806 ± 1,236
	15	0,815	0,524	35,706					
	20	0,815	0,370	54,601					
	25	0,815	0,250	69,325					
III	5	0,815	0,692	15,092	-1,595	3,146	0,998	16,400	
	10	0,815	0,568	30,307					
	15	0,815	0,462	43,313					
	20	0,815	0,320	60,736					
	25	0,815	0,175	78,528					



4. Hasil perhitungan nilai IC_{50} ekstrak etanol 70 % buah mengkudu

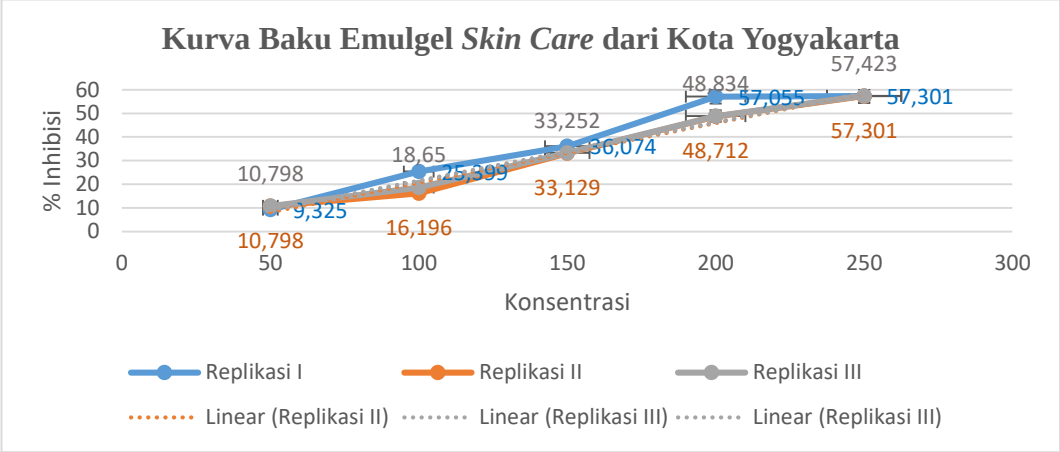
Replikasi	Konsentrasi (µg/mL)	Absorbansi DPPH	Absorbansi sampel	% Inhibisi	a	b	r	IC_{50} (µg/mL)	Rata-rata IC_{50} (µg/mL)
I	25	0,870	0,731	15,977	6,655	0,321	0,996	134,871	
	50	0,870	0,683	21,494					
	100	0,870	0,612	29,655					128,417 ± 5,589
	150	0,870	0,526	39,540					
	200	0,870	0,460	47,126					
II	25	0,870	0,730	16,092	4,816	0,361	0,990	125,191	
	50	0,870	0,682	21,609					

	100	0,870	0,61	29,885				
	150	0,870	0,525	39,655				
	200	0,870	0,416	52,184				
III	25	0,870	0,733	15,747	4,586	0,363	0,991	125,190
	50	0,870	0,682	21,609				
	100	0,870	0,611	29,770				
	150	0,870	0,523	39,885				
	200	0,870	0,418	51,954				



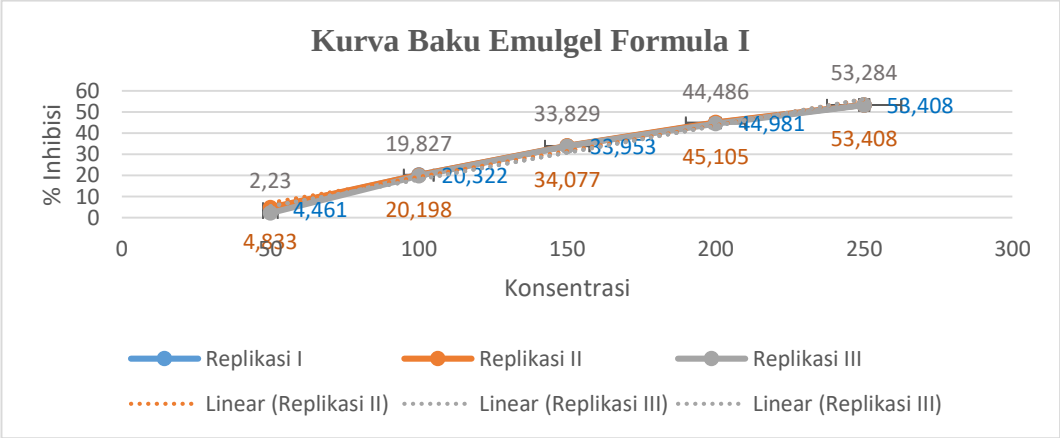
5. Hasil perhitungan nilai IC_{50} produk *skin care* "X" dari kota Yogyakarta

Replikasi	Konsentrasi (µg/mL)	Absorbansi DPPH	Absorbansi Sampel	% Inhibisi	a	b	r	IC_{50} (µg/mL)	Rata-rata IC_{50} (µg/mL)
I	50	0,815	0,739	9,325	-2,822	0,246	0,997	214,820	
	100	0,815	0,608	25,399					
	150	0,815	0,521	36,074					
	200	0,815	0,35	57,055					
	250	0,815	0,348	57,301					
II	50	0,815	0,727	10,798	-3,264	0,246	0,994	216,185	
	100	0,815	0,683	16,196					215,554 ± 0,688
	150	0,815	0,545	33,129					
	200	0,815	0,418	48,712					
	250	0,815	0,348	57,301					
III	50	0,815	0,727	10,798	-3,239	0,247	0,994	215,656	
	100	0,815	0,663	18,650					
	150	0,815	0,544	33,252					
	200	0,815	0,417	48,834					
	250	0,815	0,347	57,423					



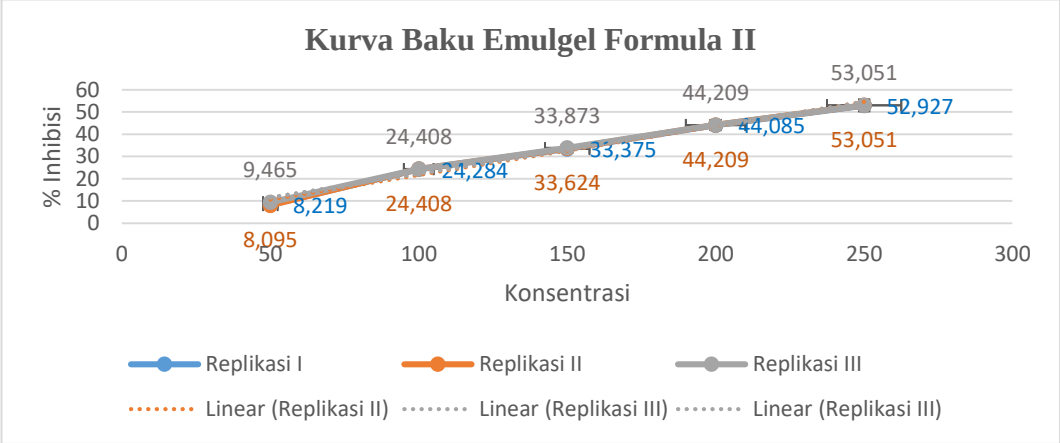
6. Hasil perhitungan nilai IC_{50} formula emulgel I

Replikasi	Konsentrasi (µg/mL)	Absorbansi DPPH	Absorbansi sampel	% Inhibisi	a	b	r	IC_{50} (µg/mL)	Rata-rata IC_{50} (µg/mL)
I	50	0,807	0,771	4,461	-5,093	0,245	0,993	225,784	
	100	0,807	0,643	20,322					
	150	0,807	0,533	33,953					
	200	0,807	0,444	44,981					
	250	0,807	0,376	53,408					
II	50	0,807	0,768	4,833	-5,093	0,244	0,993	225,689	
	100	0,807	0,644	20,198					225,824 ± 0,162
	150	0,807	0,532	34,077					
	200	0,807	0,443	45,105					
	250	0,807	0,376	53,408					
III	50	0,807	0,789	2,230	-7,299	0,254	0,990	226,002	
	100	0,807	0,647	19,827					
	150	0,807	0,534	33,829					
	200	0,807	0,448	44,486					
	250	0,807	0,377	53,284					



7. Hasil perhitungan nilai IC_{50} formula emulgel II

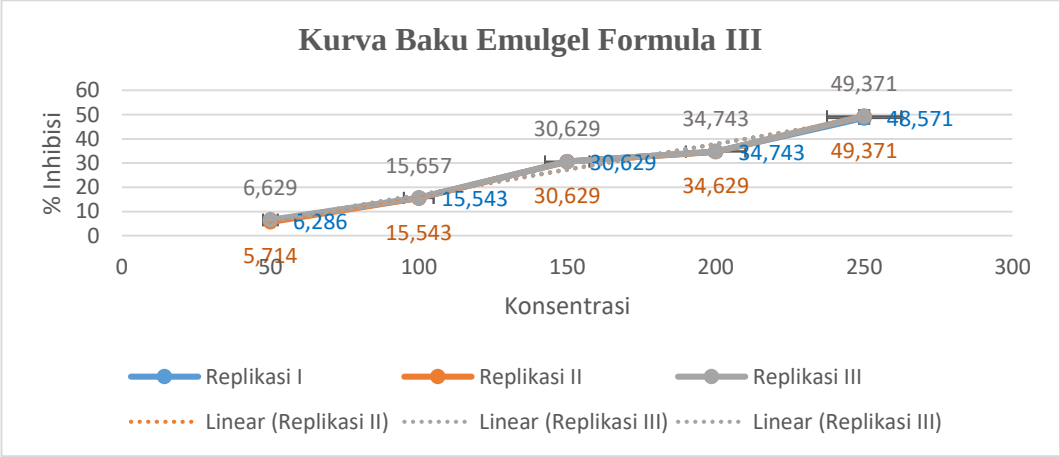
Replikasi	Konsentrasi (µg/mL)	Absorbansi DPPH	Absorbansi sampel	% Inhibisi	a	b	r	IC_{50} (µg/mL)	Rata-rata IC_{50} (µg/mL)
I	50	0,803	0,737	8,219	-0,187	0,218	0,993	229,761	
	100	0,803	0,608	24,284					
	150	0,803	0,535	33,375					
	200	0,803	0,449	44,085					
	250	0,803	0,378	52,927					
II	50	0,803	0,738	8,095	-0,238	0,219	0,993	228,944	229,386 ± 0,412
	100	0,803	0,607	24,408					
	150	0,803	0,533	33,624					
	200	0,803	0,448	44,209					
	250	0,803	0,377	53,051					
III	50	0,803	0,727	9,465	0,909	0,214	0,995	229,453	
	100	0,803	0,607	24,408					
	150	0,803	0,531	33,873					
	200	0,803	0,448	44,209					
	250	0,803	0,377	53,051					



8. Hasil perhitungan nilai IC_{50} formula emulgel III

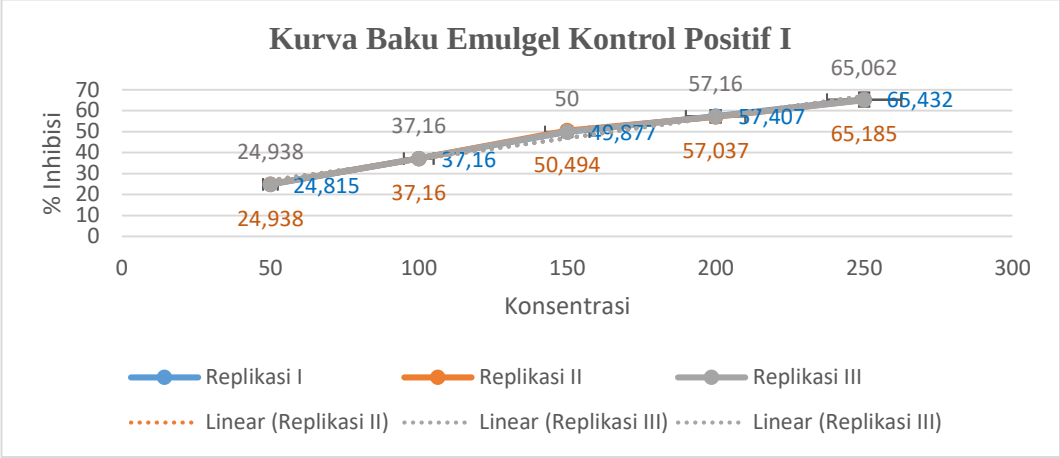
Replikasi	Konsentrasi (µg/mL)	Absorbansi DPPH	Absorbansi sampel	% Inhibisi	a	b	r	IC_{50} (µg/mL)	Rata-rata IC_{50} (µg/mL)
I	50	0,870	0,820	6,286	-3,977	0,208	0,990	260,077	
	100	0,870	0,739	15,543					
	150	0,870	0,607	30,629					
	200	0,870	0,571	34,743					
	250	0,870	0,450	48,571					
II	50	0,870	0,825	5,714	-4,734	0,213	0,990	257,250	258,453 ± 1,460
	100	0,870	0,739	15,543					
	150	0,870	0,607	30,629					
	200	0,870	0,572	34,629					

	250	0,870	0,443	49,371				
III	50	0,803	0,817	6,629	-3,966	0,209	0,990	258,033
	100	0,803	0,738	15,657				
	150	0,803	0,607	30,629				
	200	0,803	0,571	34,743				
	250	0,803	0,443	49,371				



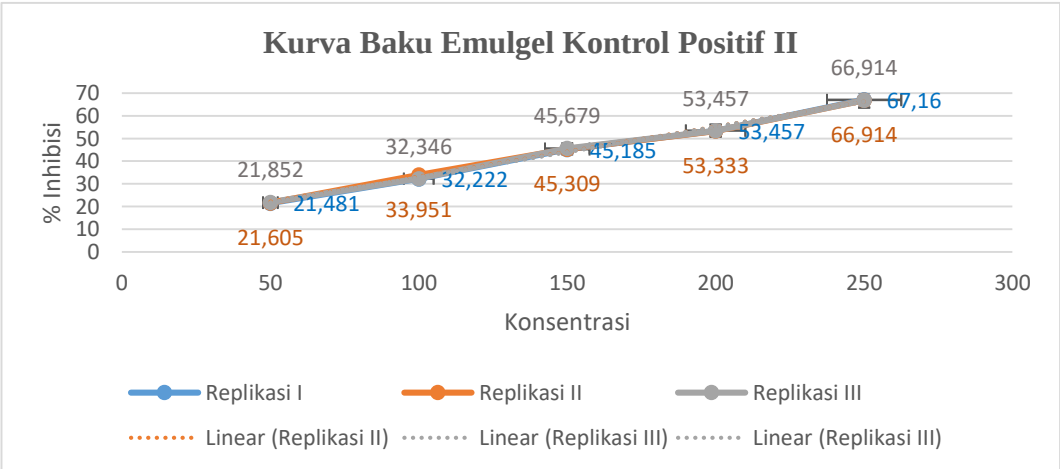
9. Hasil perhitungan nilai IC_{50} formula emulgel kontrol positif I

Replikasi	Konsentrasi (µg/mL)	Absorbansi DPPH	Absorbansi sampel	% Inhibisi	a	b	r	IC_{50} (µg/mL)	Rata-rata IC_{50} (µg/mL)
I	50	0,810	0,609	24,815	16,494	0,203	0,993	165,085	
	100	0,810	0,509	37,160					
	150	0,810	0,406	49,877					
	200	0,810	0,345	57,407					
	250	0,810	0,28	65,432					
II	50	0,810	0,608	24,938	16,852	0,201	0,990	165,129	
	100	0,810	0,509	37,160					165,285 ± 0,309
	150	0,810	0,401	50,494					
	200	0,810	0,348	57,037					
	250	0,810	0,282	65,185					
III	50	0,810	0,608	24,938	6,790	0,200	0,992	165,640	
	100	0,810	0,509	37,160					
	150	0,810	0,405	50,000					
	200	0,810	0,347	57,160					
	250	0,810	0,283	65,062					



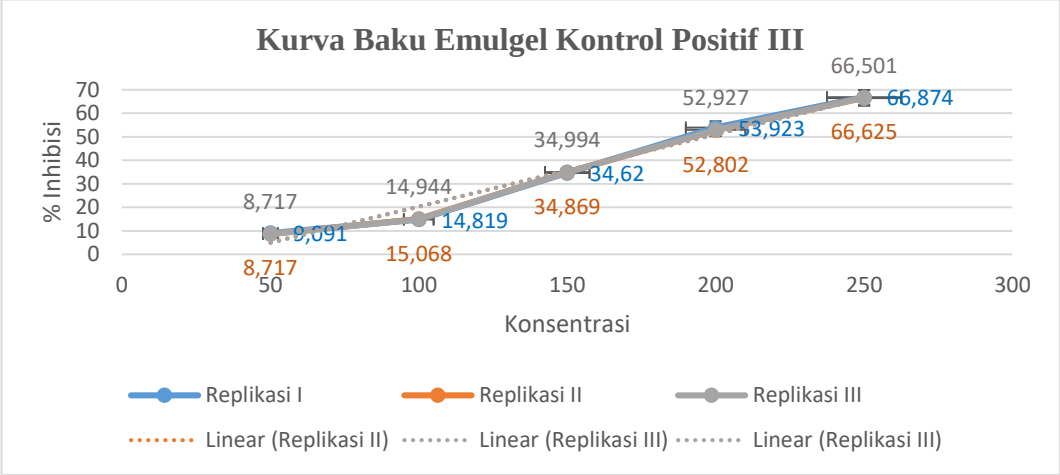
10. Hasil perhitungan nilai IC_{50} formula emulgel kontrol positif II

Replikasi	Konsentrasi (µg/mL)	Absorbansi DPPH	Absorbansi sampel	% Inhibisi	a	b	r	IC_{50} (µg/mL)	Rata-rata IC_{50} (µg/mL)
I	50	0,810	0,636	21,481	10,123	0,225	0,998	177,083	
	100	0,810	0,549	32,222					
	150	0,810	0,444	45,185					
	200	0,810	0,377	53,457					
	250	0,810	0,266	67,160					
II	50	0,810	0,635	21,605	11,222	0,220	0,997	176,263	176,698 ± 0,413
	100	0,810	0,535	33,951					
	150	0,810	0,443	45,309					
	200	0,810	0,378	53,333					
	250	0,810	0,268	66,914					
III	50	0,810	0,633	21,852	10,679	0,222	0,997	176,748	
	100	0,810	0,548	32,346					
	150	0,810	0,44	45,679					
	200	0,810	0,377	53,457					
	250	0,810	0,268	66,914					



11. Hasil perhitungan nilai IC_{50} formula emulgel kontrol positif III

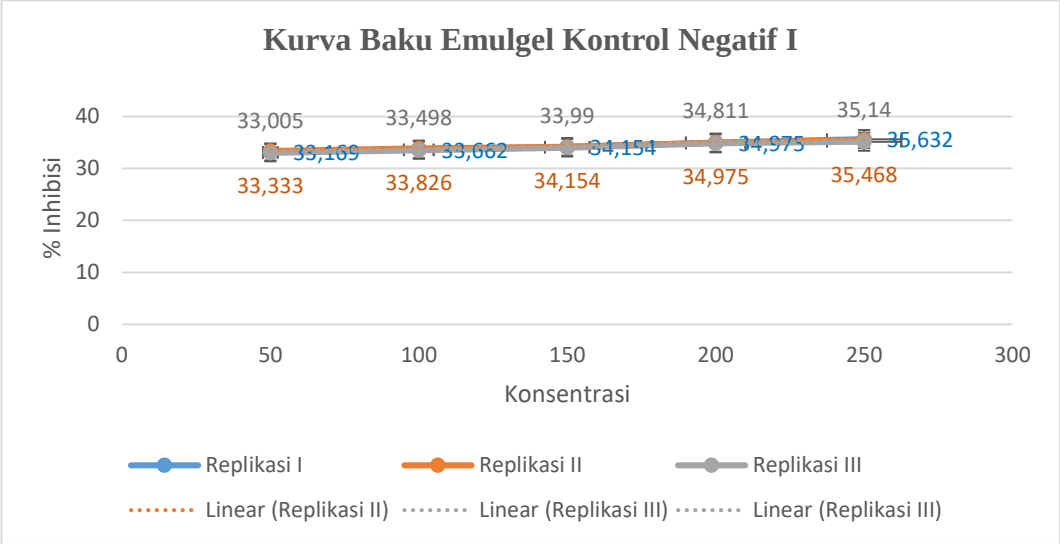
Replikasi	Konsentrasi (µg mL)	Absorbansi DPPH	Absorbansi sampel	% Inhibisi	a	b	r	IC_{50} (µg/mL)	Rata-rata IC_{50} (µg/mL)
I	50	0,803	0,73	9,091	-10,299	0,306	0,990	196,989	
	100	0,803	0,683	14,819					
	150	0,803	0,525	34,620					
	200	0,803	0,380	53,923					
	250	0,803	0,267	66,874					
II	50	0,803	0,733	8,717	-10,448	0,307	0,990	196,837	
	100	0,803	0,682	15,068					196,888 ± 0,088
	150	0,803	0,523	34,869					
	200	0,803	0,379	52,802					
	250	0,803	0,268	66,625					
III	50	0,803	0,733	8,717	-10,448	0,307	0,990	196,837	
	100	0,803	0,683	14,944					
	150	0,803	0,522	34,994					
	200	0,803	0,378	52,927					
	250	0,803	0,269	66,501					



12. Hasil perhitungan nilai IC_{50} formula emulgel kontrol negatif I

Replikasi	Konsentrasi (µg/mL)	Absorbansi DPPH	Absorbansi sampel	% Inhibisi	a	b	r	IC_{50} (µg/mL)	Rata-rata IC_{50} (µg/mL)
I	50	0,609	0,407	33,169	32,447	0,012	0,995	1.406,579	
	100	0,609	0,404	33,662					
	150	0,609	0,401	34,154					
	200	0,609	0,396	34,975					1.525,173 ± 103,141
	250	0,609	0,392	35,632					
II	50	0,609	0,406	33,333	32,726	0,011	0,991	1.593,939	
	100	0,609	0,403	33,826					
	150	0,609	0,401	34,154					
	200	0,609	0,396	34,975					

	250	0,609	0,393	35,468				
III	50	0,609	0,408	33,005	32,414	0,011	0,993	1.575,000
	100	0,609	0,405	33,498				
	150	0,609	0,402	33,990				
	200	0,609	0,397	34,811				
	250	0,609	0,395	35,140				



13. Hasil perhitungan nilai IC_{50} formula emulgel kontrol negatif II

Replikasi	Konsentrasi (µg/mL)	Absorbansi DPPH	Absorbansi sampel	% Inhibisi	a	b	r	IC_{50} (µg/mL)	Rata-rata IC_{50} (µg/mL)
I	50	0,716	0,716	5,913	4,625	0,023	0,990	2.007,558	
	100	0,716	0,708	6,965					
	150	0,716	0,703	7,622					
	200	0,716	0,692	9,067					
	250	0,716	0,681	10,512					
II	50	0,716	0,716	5,913	4,586	0,023	0,993	1.941,573	
	100	0,716	0,708	6,965					2.006,739 ± 64,759
	150	0,716	0,702	7,753					
	200	0,716	0,691	9,198					
	250	0,716	0,680	10,644					
III	50	0,716	0,715	6,045	4,823	0,022	0,991	2.017,084	
	100	0,716	0,707	7,096					
	150	0,716	0,702	7,753					
	200	0,716	0,692	9,067					
	250	0,716	0,681	10,512					

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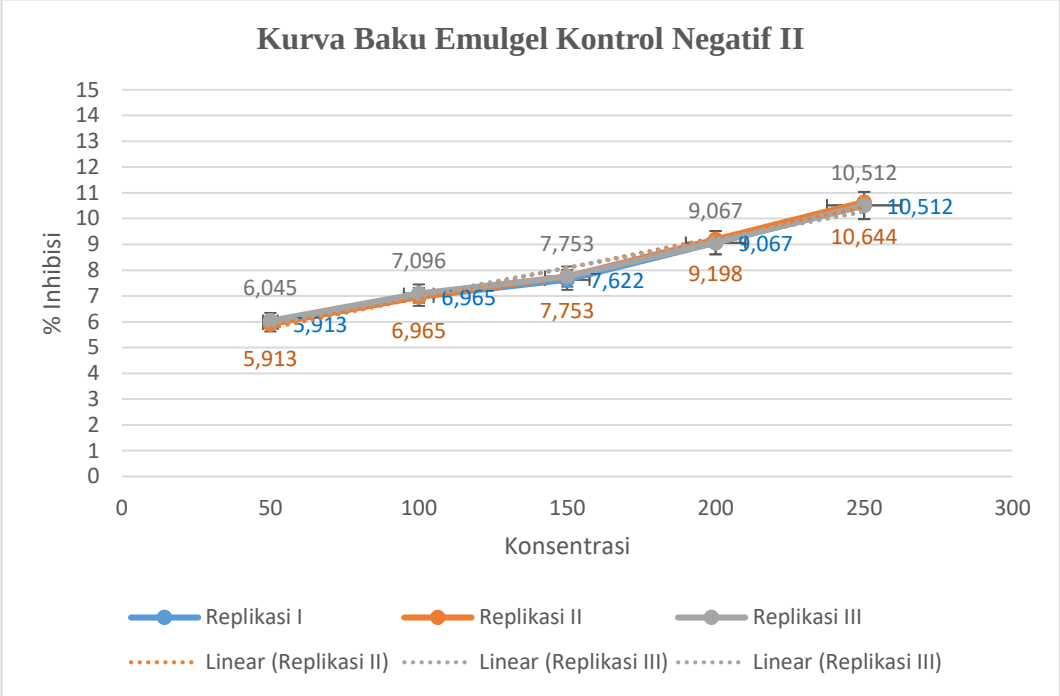
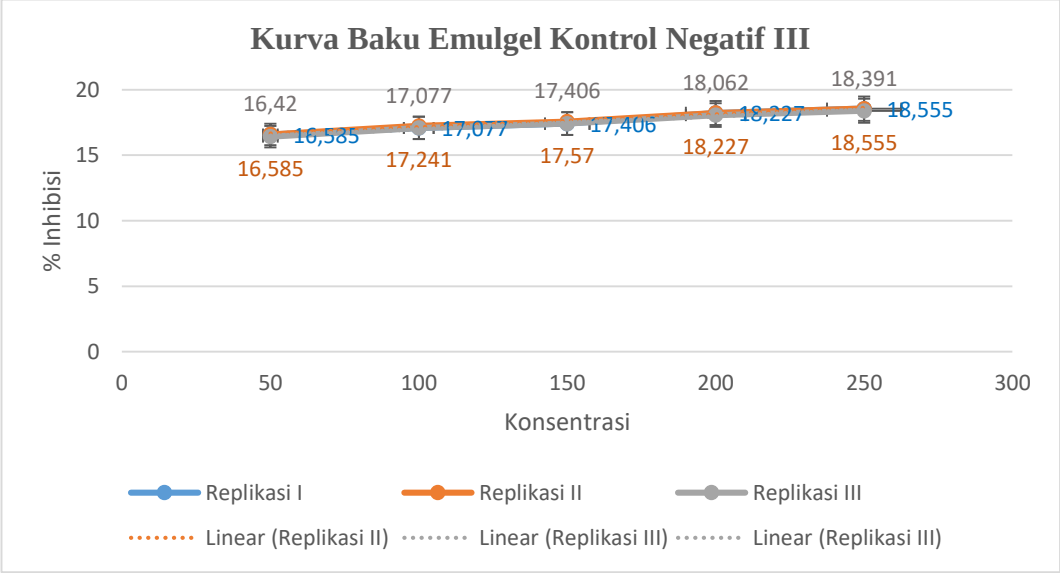


14. Hasil perhitungan nilai IC_{50} formula emulgel kontrol negatif III

Replikasi	Konsentrasi (µg/ mL)	Absorbansi DPPH	Absorbansi sampel	% Inhibisi	a	b	r	IC_{50} (µg/mL)	Rata-rata IC_{50} (µg/mL)
I	50	0,609	0,508	16,585	16,043	0,010	0,990	3.335,484	
	100	0,609	0,505	17,077					
	150	0,609	0,503	17,406					
	200	0,609	0,498	18,227					
	250	0,609	0,496	18,555					
II	50	0,609	0,508	16,585	16,158	0,010	0,993	3.345,000	
	100	0,609	0,504	17,241					3.407,384 ± 62,822
	150	0,609	0,502	17,570					
	200	0,609	0,498	18,227					
	250	0,609	0,496	18,555					
III	50	0,609	0,509	16,420	15,993	0,010	0,993	3.451,667	
	100	0,609	0,505	17,077					
	150	0,609	0,503	17,406					
	200	0,609	0,499	18,062					
	250	0,609	0,497	18,391					



15. Hasil analisis uji SPSS

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	FORMULA	Statistic	df	Sig.	Statistic	df	Sig.
ANTIOKSIDAN	VITAMIN C	.262	3	.	.956	3	.598
	EKSTRAK	.361	3	.	.806	3	.128
	MERK DAGANG	.226	3	.	.983	3	.752
	F I	.263	3	.	.955	3	.593
	F II	.231	3	.	.980	3	.730
	F III	.250	3	.	.967	3	.650
	KP I	.360	3	.	.809	3	.137
	KP II	.215	3	.	.989	3	.798
	KP III	.338	3	.	.852	3	.245
	KN I	.354	3	.	.821	3	.166
	KN II	.344	3	.	.841	3	.218
	KN III	.358	3	.	.812	3	.143

a. Lilliefors Significance Correction

Group Statistics

	FORMULA	N	Mean	Std. Deviation	Std. Error Mean
ANTIOKSIDAN	VITAMIN C	3	1.2584	.01626	.00939
	EKSTRAK	3	2.1092	.01802	.01040

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
ANTIOKSIDAN	Equal variances assumed	.126	.741	-60.716	4	.000	-.85075	.01401	-.88965	-.81185
	Equal variances not assumed			-60.716	3.959	.000	-.85075	.01401	-.88981	-.81169

Homogeneous

ANTIOKSIDAN

Tukey HSD

FORMULA	N	Subset for alpha = 0.05								
		1	2	3	4	5	6	7	8	9
VITAMIN C	3	1.2584								
EKSTRAK	3		2.1092							
KP I	3			2.2182						
KP II	3			2.2472						
KP III	3				2.2950					
MERK DAGANG	3					2.3336				
F I	3					2.3538				
F II	3					2.3606				
F III	3						2.4441			
KN I	3							3.1826		
KN II	3								3.2985	
KN III	3									3.5285
Sig.		1.000	1.000	.160	1.000	.232	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Lampiran 27. Sertifikat CoA DPPH

PT. SMART-LAB INDONESIA

MANUFACTURER OF ANALYTICAL REAGENTS

CERTIFICATE OF ANALYSIS

Product Name	: 2,2-Dipheny-1-Picrylhydrazyl (Free radical)	Molecular Weight	: 394.32 g/mol
Catalog No.	: A 2095	Batch No.	: 221220001
Grade	: Analytical Reagent	Manufacturing Date	: December 22,2020
Formula	: $C_{18}H_{12}N_5O_6$	Expire Date	: December , 2025
Cas No	: 1898-66-4		

NO	ITEM TEST	UNITS	SPECIFICATION	RESULT
1.	Appearance	_	Purple black or green powder	Conform
2.	Assay	wt %	min 85.0	86.33
3.	Melting point	°C	125 – 145	127.7

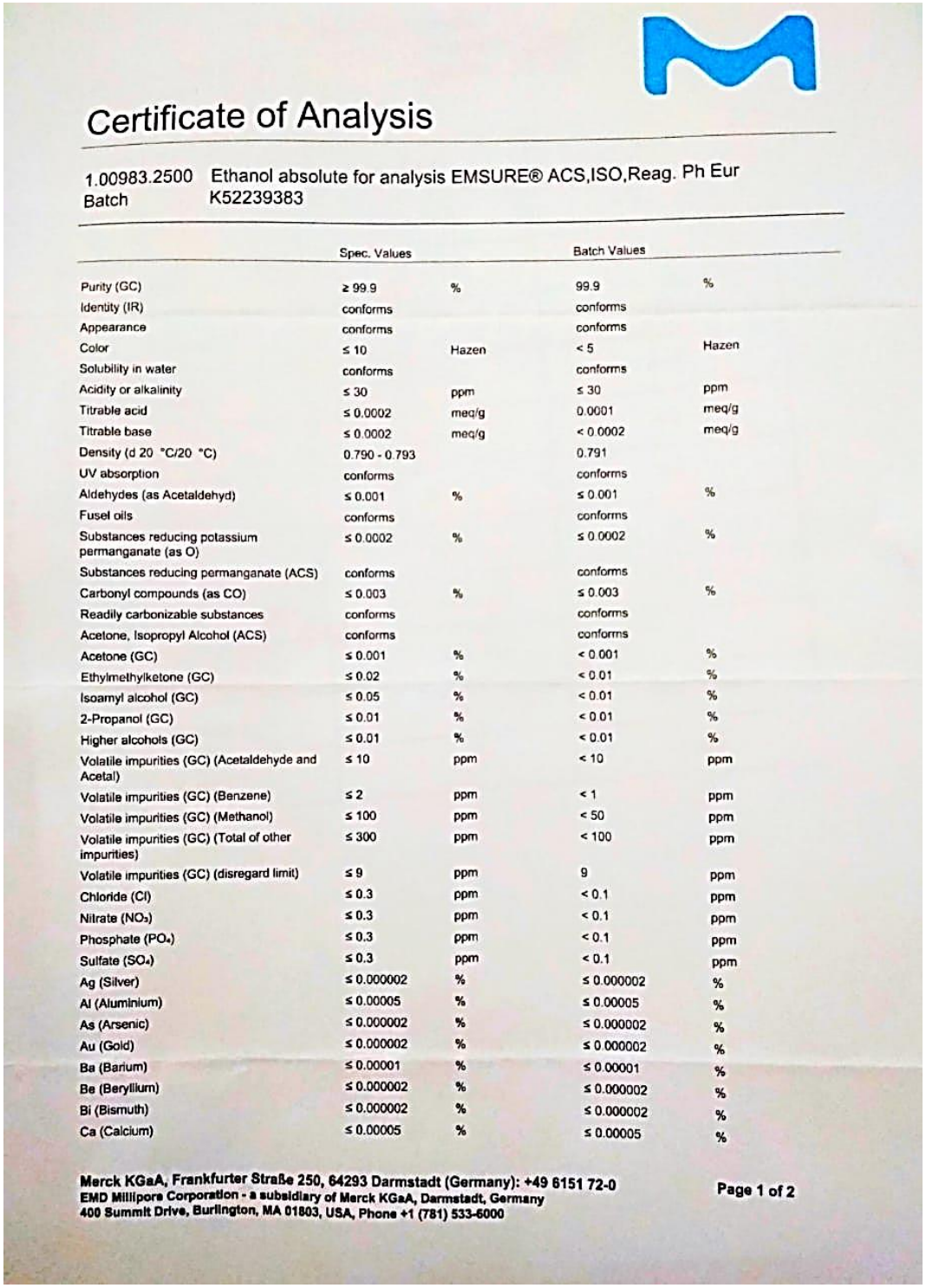
Result : The above product corresponds to AR Grade

Reference or standard of product specification to Analar standard specification

PT. SMART LAB INDONESIA

SUDIRO S.Si.
Head QC

Lampiran 28. Sertifikat CoA etanol *pro analysis*



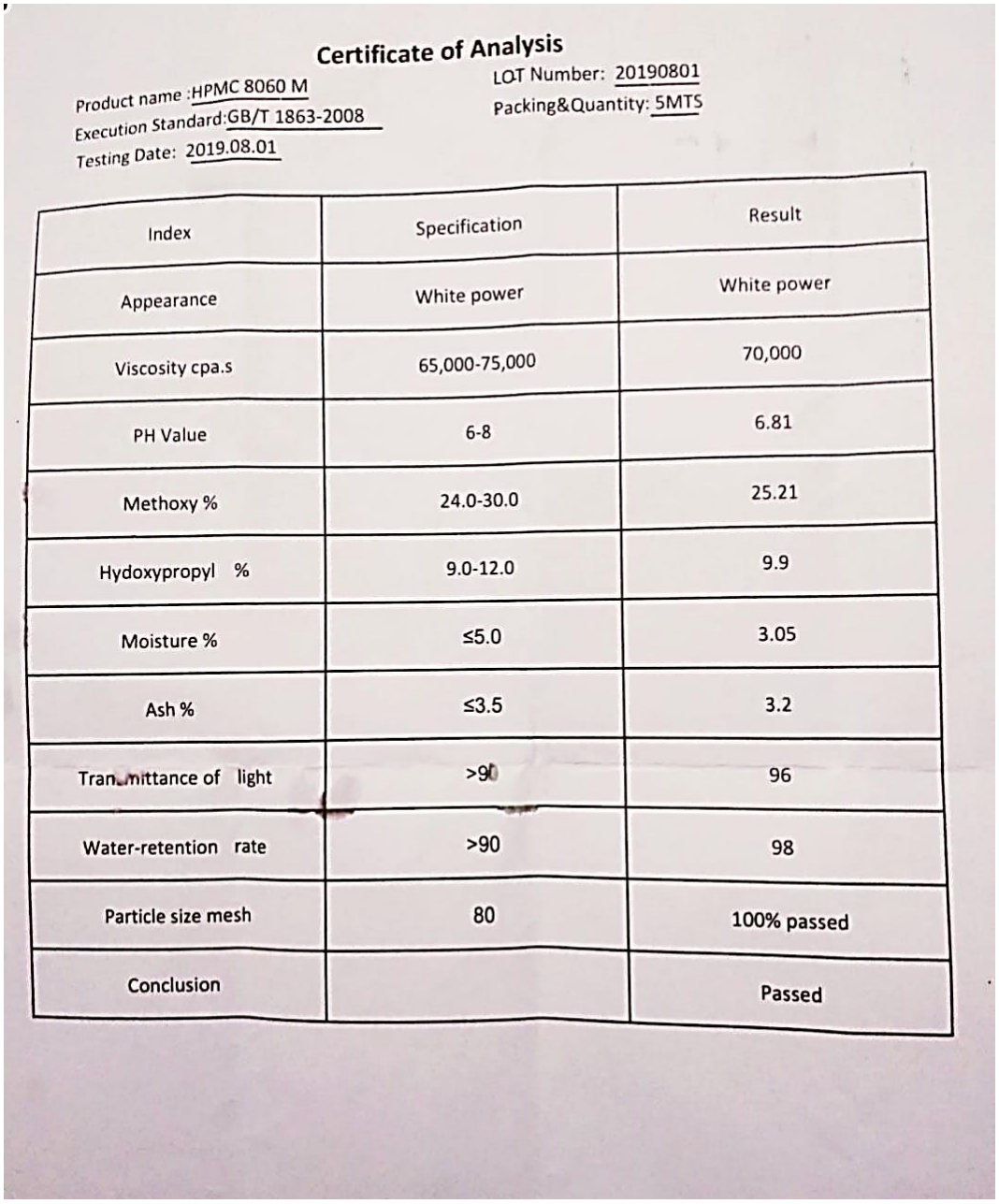
Certificate of Analysis

1.00983.2500 Ethanol absolute for analysis EMSURE® ACS,ISO,Reag. Ph Eur
Batch K52239383

	Spec. Values		Batch Values	
Purity (GC)	≥ 99.9	%	99.9	%
Identity (IR)	conforms		conforms	
Appearance	conforms		conforms	
Color	≤ 10	Hazen	< 5	Hazen
Solubility in water	conforms		conforms	
Acidity or alkalinity	≤ 30	ppm	≤ 30	ppm
Titrable acid	≤ 0.0002	meq/g	0.0001	meq/g
Titrable base	≤ 0.0002	meq/g	< 0.0002	meq/g
Density (d 20 °C/20 °C)	0.790 - 0.793		0.791	
UV absorption	conforms		conforms	
Aldehydes (as Acetaldehyd)	≤ 0.001	%	≤ 0.001	%
Fusel oils	conforms		conforms	
Substances reducing potassium permanganate (as O)	≤ 0.0002	%	≤ 0.0002	%
Substances reducing permanganate (ACS)	conforms		conforms	
Carbonyl compounds (as CO)	≤ 0.003	%	≤ 0.003	%
Readily carbonizable substances	conforms		conforms	
Acetone, Isopropyl Alcohol (ACS)	conforms		conforms	
Acetone (GC)	≤ 0.001	%	< 0.001	%
Ethylmethylketone (GC)	≤ 0.02	%	< 0.01	%
Isoamyl alcohol (GC)	≤ 0.05	%	< 0.01	%
2-Propanol (GC)	≤ 0.01	%	< 0.01	%
Higher alcohols (GC)	≤ 0.01	%	< 0.01	%
Volatile impurities (GC) (Acetaldehyde and Acetal)	≤ 10	ppm	< 10	ppm
Volatile impurities (GC) (Benzene)	≤ 2	ppm	< 1	ppm
Volatile impurities (GC) (Methanol)	≤ 100	ppm	< 50	ppm
Volatile impurities (GC) (Total of other impurities)	≤ 300	ppm	< 100	ppm
Volatile impurities (GC) (disregard limit)	≤ 9	ppm	9	ppm
Chloride (Cl)	≤ 0.3	ppm	< 0.1	ppm
Nitrate (NO_3)	≤ 0.3	ppm	< 0.1	ppm
Phosphate (PO_4)	≤ 0.3	ppm	< 0.1	ppm
Sulfate (SO_4)	≤ 0.3	ppm	< 0.1	ppm
Ag (Silver)	≤ 0.000002	%	≤ 0.000002	%
Al (Aluminium)	≤ 0.00005	%	≤ 0.00005	%
As (Arsenic)	≤ 0.000002	%	≤ 0.000002	%
Au (Gold)	≤ 0.000002	%	≤ 0.000002	%
Ba (Barium)	≤ 0.00001	%	≤ 0.00001	%
Be (Beryllium)	≤ 0.000002	%	≤ 0.000002	%
Bi (Bismuth)	≤ 0.000002	%	≤ 0.000002	%
Ca (Calcium)	≤ 0.00005	%	≤ 0.00005	%

Merck KGaA, Frankfurter Straße 250, 64293 Darmstadt (Germany): +49 6151 72-0
EMD Millipore Corporation - a subsidiary of Merck KGaA, Darmstadt, Germany
400 Summit Drive, Burlington, MA 01803, USA, Phone +1 (781) 533-6000

Lampiran 29. Sertifikat CoA HPMC



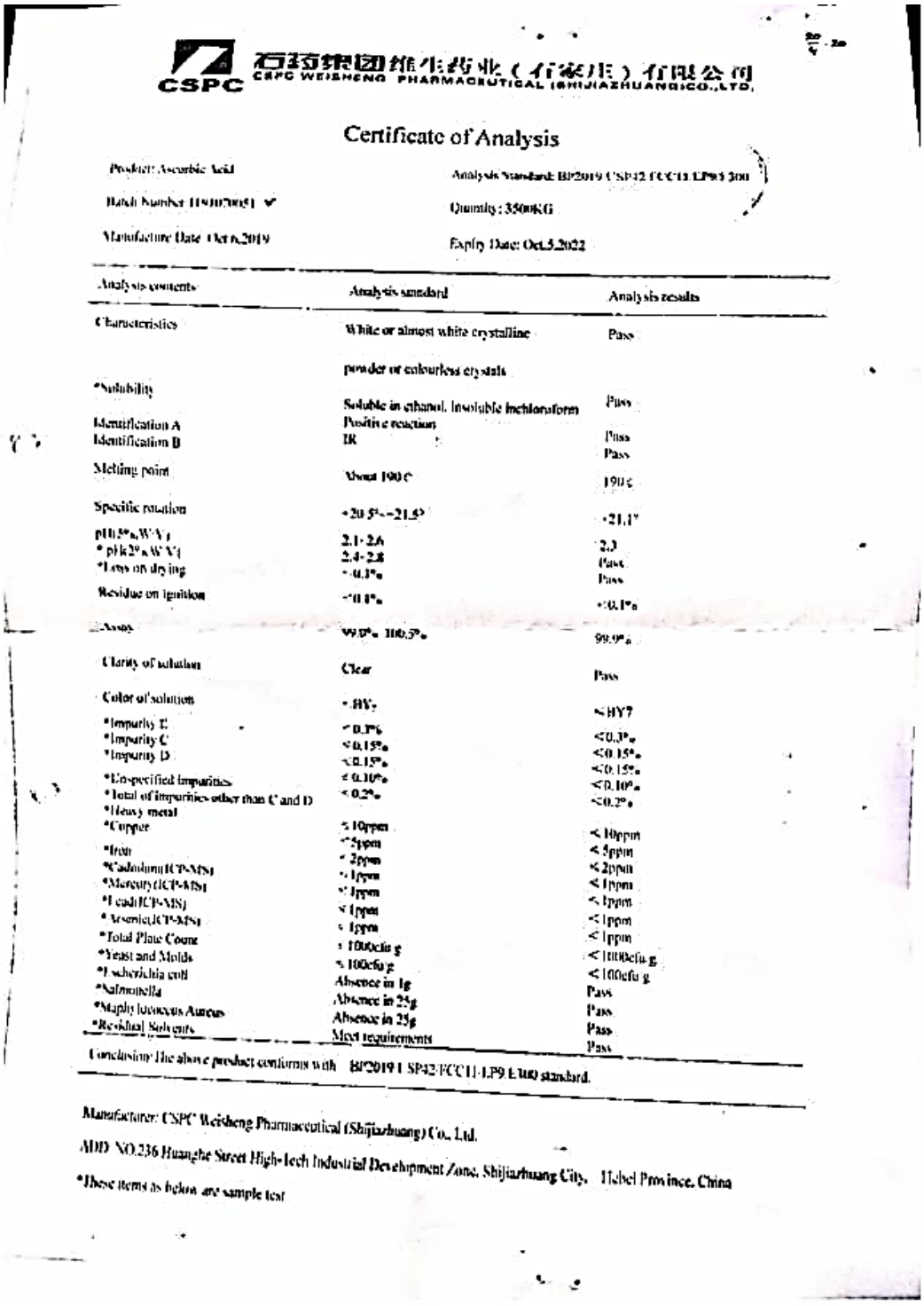
Certificate of Analysis

Product name :HPMC 8060 M
Execution Standard:GB/T 1863-2008
Testing Date: 2019.08.01

LOT Number: 20190801
Packing&Quantity: 5MTS

Index	Specification	Result
Appearance	White power	White power
Viscosity cpa.s	65,000-75,000	70,000
PH Value	6-8	6.81
Methoxy %	24.0-30.0	25.21
Hydoxypropyl %	9.0-12.0	9.9
Moisture %	≤5.0	3.05
Ash %	≤3.5	3.2
Transmittance of light	>90	96
Water-retention rate	>90	98
Particle size mesh	80	100% passed
Conclusion		Passed

Lampiran 30. Sertifikat CoA baku vitamin C



CSPC 石药集团维生药业（石家庄）有限公司
CSPC WEISHENG PHARMACEUTICAL (SHIJIAZHUANG)CO.,LTD.

Certificate of Analysis

Product: Ascorbic Acid — Analysis Standard: BP2019 USP42 FCC11 EP9.3 200

Batch Number: [illegible] — Quantity: 35000KG

Manufacture Date: Oct.6,2019 — Expiry Date: Oct.5,2022

Analysis contents	Analysis standard	Analysis results
Characteristics	White or almost white crystalline powder or colourless crystals	Pass
*Solubility	Soluble in ethanol. Insoluble inchloroform	Pass
Identification A	Positive reaction	Pass
Identification B	IR	Pass
Melting point	About 190℃	190℃
Specific rotation	+20.5°~+21.5°	+21.1°
pH(5%,W/V)	2.1~2.6	2.3
*pH(2%,W/V)	2.4~2.8	Pass
*Loss on drying	≤0.4%	Pass
Residue on ignition	≤0.1%	≤0.1%
Assay	99.0%~100.5%	99.9%
Clarity of solution	Clear	Pass
Color of solution	≤BY7	≤BY7
*Impurity E	≤0.3%	≤0.3%
*Impurity C	≤0.15%	≤0.15%
*Impurity D	≤0.15%	≤0.15%
*Un-specified Impurities	≤0.10%	≤0.10%
*Total of impurities other than C and D	≤0.2%	≤0.2%
*Heavy metal	≤10ppm	≤10ppm
*Copper	≤5ppm	≤5ppm
*Iron	≤2ppm	≤2ppm
*Cadmium(ICP-MS)	≤1ppm	≤1ppm
*Mercury(ICP-MS)	≤1ppm	≤1ppm
*Lead(ICP-MS)	≤1ppm	≤1ppm
*Arsenic(ICP-MS)	≤1ppm	≤1ppm
*Total Plate Count	≤1000cfu/g	≤1000cfu/g
*Yeast and Molds	≤100cfu/g	≤100cfu/g
*Escherichia coli	Absence in 1g	Pass
*Salmonella	Absence in 25g	Pass
*Staphylococcus Aureus	Absence in 25g	Pass
*Residual Solvents	Meet requirements	Pass

Conclusion: The above product conforms with BP2019 USP42 FCC11 EP9 E300 standard.

Manufacturer: CSPC Weicheng Pharmaceutical (Shijiazhuang) Co., Ltd.

ADD: NO.236 Huanghe Street High-tech Industrial Development Zone, Shijiazhuang City, Hebei Province, China

*These items as below are sample test