BAB V

KESIMPULAN DAN SARAN

A. Kesimpulan

Pertama, kombinasi PVA dan CMC-Na yang optimal sebagai basis formula optimum masker wajah *peel-off* ekstrak etanol 96% buah stroberi secara *Simplex Lattice Design* yaitu PVA 4,498% dan CMC-Na 1,502% dengan nilai *desirability* sebesar 0,429.

Kedua, terdapat perbedaan nilai IC_{50} antara ekstrak dan formula optimum. Nilai IC_{50} dalam ekstrak etanol 96% buah stroberi sebesar 1009,252 µg/ml, sedangkan nilai IC_{50} dalam formula optimum masker wajah *peel-off* ekstrak etanol 96% buah stroberi sebesar 1981,527 µg/ml.

B. Saran

Pertama, perlu dilakukan pemilihan metode pengekstraksian yang tepat terhadap buah stroberi untuk kemudian dibandingkan aktivitas antioksidannya.

Kedua, diperlukan metode khusus untuk melepaskan zat aktif senyawa antioksidan dari basisnya (seperti sonifikasi) agar tidak menyebabkan perbedaan yang signifikan antara nilai IC_{50} ekstrak dengan nilai IC_{50} formula optimum.

Ketiga, perlu dilakukan pengujian aktivitas antioksidan secara *in vivo* untuk mengetahui efektivitas sediaan masker wajah *peel-off* ekstrak buah stroberi dalam mencegah penuaan dini pada kulit wajah.

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LAMPIRAN

Lampiran 1. Surat keterangan determinasi tanaman stroberi

KEMENTERIAN KESEHATAN RI
BADAN PENELITIAN DAN PENGEMBANGAN KESEHATAN
BALAI BESAR PENELITIAN DAN PENGEMBANGAN
TANAMAN OBAT DAN OBAT TRADISIONAL
Jalan Raya Lawu No. 11 Tawangmangu, Karanganyar, Jawa Tengah
Telepon : (0271) 697010 Faksimile: (0271) 697451
E-mail: b2p2to2t@litbang.depkes.go.id Website: http://www.b2p2toot.litbang.depkes.go.id

Nomor : KM.03.02/VI.3/ 5580 /2014 16 November 2014
Lampiran : 1 lembar
Hal : Keterangan determinasi

Yth. Dekan Fakultas Farmasi
Universitas Setia Budi
Jl. Letjend Sutoyo Surakarta

Merujuk surat Saudara nomor 957/A10-4/19.08.2014 dengan ini kami sampaikan bahwa mahasiswa Saudara atas nama Evi Sulistyo Rini (NIM 17113321 A) telah melakukan determinasi tanaman *Fragaria vesca* L. di Balai Besar Penelitian dan Pengembangan Tanaman Obat dan Obat Tradisional Tawangmangu (hasil terlampir).

Untuk itu, apabila telah selesai melaksanakan penelitian yang bersangkutan diwajibkan menyerahkan satu eksemplar laporan hasil penelitian (skripsi) yang telah ditandatangani oleh Dekan Fakultas Farmasi USB kepada Kepala B2P2TO2T.

Atas perhatian Saudara, kami ucapkan terima kasih.

a.n Kepala
Kabid Pelayanan Penelitian

Nita Supriyati, M. Biotech., Apt.
NIP. 197811152002122001

Tembusan :
1. Kepala B2P2TO2T
2. Yang bersangkutan

SURAT KETERANGAN DETERMINASI

Species : ***Fragaria* x *ananassa* Duch.**
Familia : **Rosaceae**

Kunci determinasi (Backer dan van Den Brink, 1962):
1b_2b_3a_4b_9a_10b_____ **8. Fragaria**
1b_2b_____ ***Fragaria* x *ananassa* Duch.**

Pertelaan:
Perawakan herba tinggi mencapai 20 cm, tidak mempunyai stolon. Daun majemuk menjari beranak daun 3, anak daun berdaging, keras, permukaan atas daun berwarna hijau tua hingga hijau cerah, panjang helaian daun 2,5-6 cm, lebar 1,75-5 cm, panjang tangkai daun 1,5-12 cm, panjang tangkai anak daun samping 1-3 mm, panjang tangkai anak daun ujung 3-6 mm. Bunga banci, jumlah benangsari 25-36, panjang tangkai sari 1,5-3 mm, panjang tangkai putik 1,75-2 mm, warna kuning, panjang tangkai bunga 1-3 cm, yang berbuah melengkung ke bawah, kelopak pada buah dan kelopak tambahan datar, daun pelindung pada kelopak tambahan berukuran 7-11 mm, panjang daun kelopak 7-13 mm, rata atau bergigi 1-2, panjang daun mahkota 9-15 mm, dasar bunga berambut. Buah berwarna merah atau merah muda, berukuran besar.

Tawangmangu, November 2014
Penanggungjawab Determinasi,

Dyah Subositi, M.Sc.
198308152006042003

Lampiran 2. Gambar bahan penelitian

Tanaman stroberi

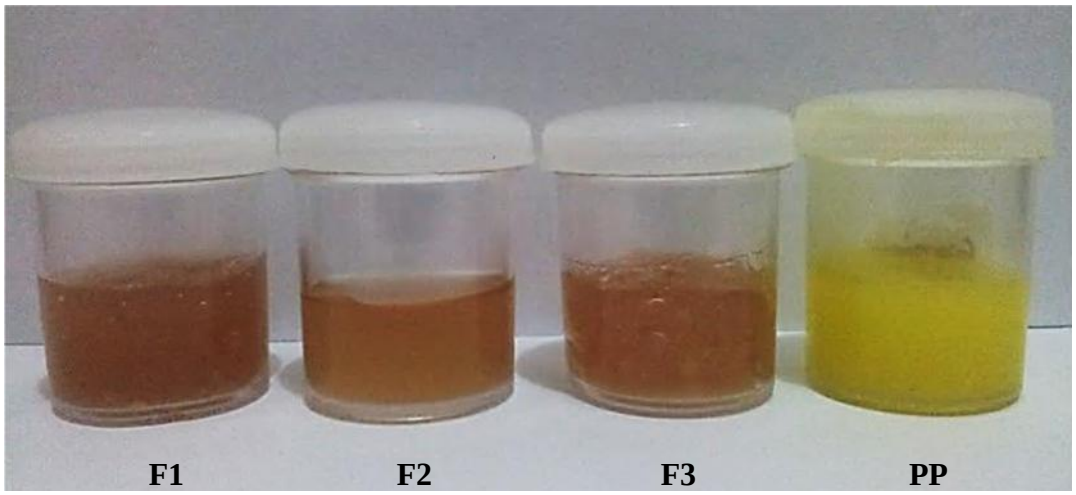
Buah stroberi

Potongan dadu buah stroberi

Maserat

Ekstrak buah stroberi

Lampiran 3. Gambar masker *peel-off* ekstrak etanol 96% buah stroberi (*Fragaria x ananassa* var Duch.)



Formula masker wajah *peel-off* ekstrak etanol 96% buah stroberi

Keterangan:

F1 = Formula 1

F2 = Formula 2

F3 = Formula 3

PP = Produk pasaran

Formula optimum masker wajah *peel-off* ekstrak etanol 96% buah stroberi

Lampiran 4. Data dan perhitungan rendemen ekstrak buah stroberi

Berat basah	Berat ekstrak	Rendemen
600 gram	42,5 gram	7,084%

Perhitungan rendemen

$$\% \text{ rendemen} = \frac{\text{Berat ekstrak}}{\text{Berat basah}} \text{ x } 100\ \%$$

$$= \frac{42,5}{600} \text{ x } 100\ \%$$

$$= 7,08333\ \%$$

$$= 7,084\ \%$$

Lampiran 5. Data penetapan kandungan lembab ekstrak buah stroberi

Replikasi	Berat ekstrak (gram)	Kadar air (%)
1	2,00	15,0
2	2,01	14,9
3	2,05	15,1
	Rata-rata ± SD	15 ± 0,1

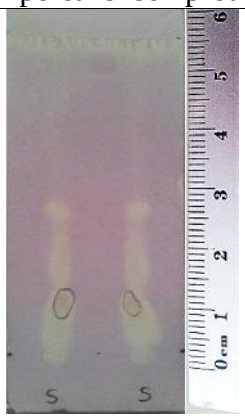
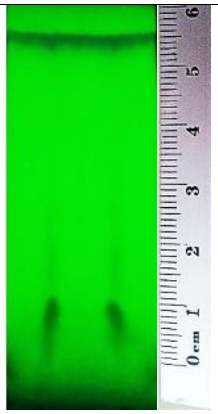
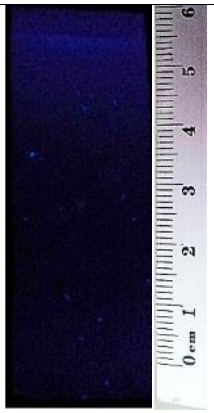
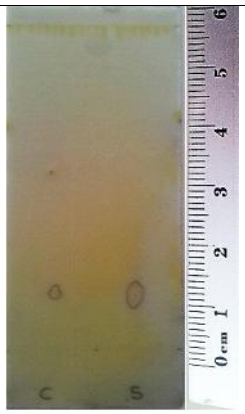
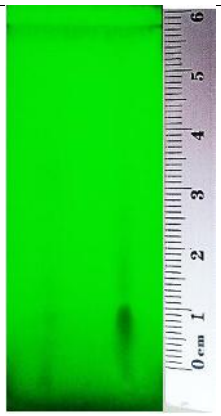
Pembacaan dengan alat *moisture balance*

Replikasi 1

Replikasi 2

Replikasi 3

Lampiran 6. Profil kromatogram dan perhitungan Rf

Senyawa	Identifikasi			Perhitungan Rf
	Visibel dengan pereaksi semprot	UV 254 nm	UV 366 nm	
Antosianin	 **S S**	 **S S**	 **S S**	Sampel: $Rf = \frac{x}{y} = \frac{2,5}{5,5} = 0,45$
Rutin dan kuersetin	 **R K S**	 **R K S**	 **R K S**	Sampel: $Rf = \frac{x}{y} = \frac{2,5}{5,5} = 0,45$ Rutin: $Rf = \frac{x}{y} = \frac{5,3}{5,5} = 0,96$ Kuersetin: $Rf = \frac{x}{y} = \frac{5,2}{5,5} = 0,94$
Vitamin C	 **C S**	 **C S**	 **C S**	Sampel: $Rf = \frac{x}{y} = \frac{1}{5,5} = 0,18$ Vitamin C: $Rf = \frac{x}{y} = \frac{0,9}{5,5} = 0,16$

Keterangan:

C = vitamin C standar **S = sampel**
R = rutin standar **x = jarak yang ditempuh pusat bercak sampel**
K = kuersetin standar **y = jarak yang ditempuh pelarut**

Lampiran 7. Data uji statistik sifat fisik masker wajah *peel-off* ekstrak buah stroberi

Lampiran 7a. Data uji statistik viskositas (dPas)
Formula 1

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Viskositas (dPas)	6	812.50	12.145	800	825

One-Sample Kolmogorov-Smirnov Test

		Viskositas (dPas)
N		6
Normal Parameters[a,,b]	Mean	812.50
	Std. Deviation	12.145
Most Extreme Differences	Absolute	.232
	Positive	.232
	Negative	-.232
Kolmogorov-Smirnov Z		.567
Asymp. Sig. (2-tailed)		.905

a. Test distribution is Normal.

b. Calculated from data.

T-Test

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
Viskositas (dPas)	Hari ke 2	3	823.33	2.887	1.667
	Minggu ke 4	3	801.67	2.887	1.667

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
Viskositas (dPas)	Equal variances assumed	.000	1.000	9.192	4	.001	21.667	2.357	15.123	28.211
	Equal variances not assumed			9.192	4.000	.001	21.667	2.357	15.123	28.211

Formula 2

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Viskositas (dPas)	6	205.83	4.916	200	210

One-Sample Kolmogorov-Smirnov Test

		Viskositas (dPas)
N		6
Normal Parameters[a,,b]	Mean	205.83
	Std. Deviation	4.916
Most Extreme Differences	Absolute	.302
	Positive	.216
	Negative	-.302
Kolmogorov-Smirnov Z		.739
Asymp. Sig. (2-tailed)		.646

a. Test distribution is Normal.

b. Calculated from data.

T-Test

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
Viskositas (dPas)	Hari ke 2	3	210.00	.000	.000
	Minggu ke 4	3	201.67	2.887	1.667

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
Viskositas (dPas)	Equal variances assumed	16.000	.016	5.000	4	.007	8.333	1.667	3.706	12.961
	Equal variances not assumed			5.000	2.000	.038	8.333	1.667	1.162	15.504

Formula 3

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Viskositas (dPas)	6	620.83	7.360	610	630

One-Sample Kolmogorov-Smirnov Test

		Viskositas (dPas)
N		6
Normal Parameters[a,,b]	Mean	620.83
	Std. Deviation	7.360
Most Extreme Differences	Absolute	.214
	Positive	.119
	Negative	-.214
Kolmogorov-Smirnov Z		.525
Asymp. Sig. (2-tailed)		.946

a. Test distribution is Normal.

b. Calculated from data.

T-Test

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
Viskositas (dPas)	Hari ke 2	3	625.00	5.000	2.887
	Minggu ke 4	3	616.67	7.638	4.410

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
Viskositas (dPas)	Equal variances assumed	.727	.442	1.581	4	.189	8.333	5.270	-6.300	22.966
	Equal variances not assumed			1.581	3.448	.200	8.333	5.270	-7.271	23.938

Lampiran 7b. Data uji statistik daya sebar (cm)
Formula 1

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Daya Sebar (cm)	6	2.50417	.270840	2.175	2.800

One-Sample Kolmogorov-Smirnov Test

		Daya Sebar (cm)
N		6
Normal Parameters[a,,b]	Mean	2.50417
	Std. Deviation	.270840
Most Extreme Differences	Absolute	.215
	Positive	.215
	Negative	-.205
Kolmogorov-Smirnov Z		.528
Asymp. Sig. (2-tailed)		.943

a. Test distribution is Normal.

b. Calculated from data.

T-Test

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
Daya Sebar (cm)	Hari ke 2	3	2.26667	.087797	.050690
	Minggu ke 4	3	2.74167	.080364	.046398

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

Daya Sebar (cm)	Equal variances assumed	.000	1.000	-6.912	4	.002	-.475000	.068718	-.665793	-.284207
	Equal variances not assumed			-6.912	3.969	.002	-.475000	.068718	-.666380	-.283620

Formula 2

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Daya Sebar (cm)	6	5.32917	.539077	4.575	5.800

One-Sample Kolmogorov-Smirnov Test

		Daya Sebar (cm)
N		6
Normal Parameters[a,,b]	Mean	5.32917
	Std. Deviation	.539077
Most Extreme Differences	Absolute	.296
	Positive	.191
	Negative	-.296
Kolmogorov-Smirnov Z		.725
Asymp. Sig. (2-tailed)		.670

a. Test distribution is Normal.

b. Calculated from data.

T-Test

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
Daya Sebar (cm)	Hari ke 2	3	4.87500	.327872	.189297
	Minggu ke 4	3	5.78333	.014434	.008333

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
Daya Sebar (cm)	Equal variances assumed	5.730	.075	-4.794	4	.009	-.908333	.189480	-1.434415	-.382252

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
Daya Sebar (cm)	Equal variances assumed	5.730	.075	-4.794	4	.009	-.908333	.189480	-1.434415	-.382252
	Equal variances not assumed			-4.794	2.008	.041	-.908333	.189480	-1.720592	-.096075

Formula 3

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Daya Sebar (cm)	6	2.72083	.434574	2.225	3.175

One-Sample Kolmogorov-Smirnov Test

		Daya Sebar (cm)
N		6
Normal Parameters[a,,b]	Mean	2.72083
	Std. Deviation	.434574
Most Extreme Differences	Absolute	.240
	Positive	.233
	Negative	-.240
Kolmogorov-Smirnov Z		.587
Asymp. Sig. (2-tailed)		.881

a. Test distribution is Normal.

b. Calculated from data.

T-Test

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
Daya Sebar (cm)	Hari ke 2	3	2.33333	.112731	.065085
	Minggu ke 4	3	3.10833	.094648	.054645

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
Daya Sebar (cm)	Equal variances assumed	.019	.896	-9.119	4	.001	-.775000	.084984	-1.010952	-.539048
	Equal variances not assumed			-9.119	3.884	.001	-.775000	.084984	-1.013766	-.536234

Lampiran 7c. Data uji statistik waktu sediaan mengering (menit) Formula 1

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Waktu Sediaan Mengering (menit)	6	26.3867	2.78735	23.37	29.13

One-Sample Kolmogorov-Smirnov Test

		Waktu Sediaan Mengering (menit)
N		6
Normal Parameters[a,,b]	Mean	26.3867
	Std. Deviation	2.78735
Most Extreme Differences	Absolute	.291
	Positive	.291
	Negative	-.283
Kolmogorov-Smirnov Z		.713
Asymp. Sig. (2-tailed)		.690

a. Test distribution is Normal.

b. Calculated from data.

T-Test

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
Waktu Sediaan Mengering (menit)	Hari ke 2	3	23.8600	.42509	.24542
	Minggu ke 4	3	28.9133	.30072	.17362

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
Waktu Sediaan Mengering (menit)	Equal variances assumed	.883	.401	-16.809	4	.000	-5.05333	.30063	-5.88801	-4.21865
	Equal variances not assumed			-16.809	3.601	.000	-5.05333	.30063	-5.92580	-4.18087

Formula 2

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Waktu Sediaan Mengering (menit)	6	16.0633	1.01695	15.08	17.18

One-Sample Kolmogorov-Smirnov Test

		Waktu Sediaan Mengering (menit)
N		6
Normal Parameters[a,,b]	Mean	16.0633
	Std. Deviation	1.01695
Most Extreme Differences	Absolute	.297
	Positive	.297
	Negative	-.194
Kolmogorov-Smirnov Z		.726
Asymp. Sig. (2-tailed)		.667

a. Test distribution is Normal.

b. Calculated from data.

T-Test

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
Waktu Sediaan Mengering (menit)	Hari ke 2	3	15.1567	.07095	.04096
	Minggu ke 4	3	16.9700	.33808	.19519

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
Waktu Sediaan Mengering (menit)	Equal variances assumed	9.340	.038	-9.092	4	.001	-1.81333	.19944	-2.36708	-1.25959
	Equal variances not assumed			-9.092	2.176	.009	-1.81333	.19944	-2.60833	-1.01833

Formula 3

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Waktu Sediaan Mengering	6	21.8350	2.54005	19.49	24.22

One-Sample Kolmogorov-Smirnov Test

		Waktu Sediaan Mengering
N		6
Normal Parameters[a,,b]	Mean	21.8350
	Std. Deviation	2.54005
Most Extreme Differences	Absolute	.317
	Positive	.317
	Negative	-.312
Kolmogorov-Smirnov Z		.776
Asymp. Sig. (2-tailed)		.583

a. Test distribution is Normal.

b. Calculated from data.

T-Test

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
Waktu Sediaan Mengering	Hari ke 2	3	19.5167	.02517	.01453
	Minggu ke 4	3	24.1533	.07024	.04055

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
Waktu Sediaan Mengering	Equal variances assumed	1.926	.237	-107.639	4	.000	-4.63667	.04308	-4.75627	-4.51707
	Equal variances not assumed			-107.639	2.505	.000	-4.63667	.04308	-4.79042	-4.48291

Lampiran 7d. Data uji statistik pH

Formula 1

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
pH	6	5.4117	.16142	5.26	5.60

One-Sample Kolmogorov-Smirnov Test

		pH
N		6
Normal Parameters[a,,b]	Mean	5.4117
	Std. Deviation	.16142
Most Extreme Differences	Absolute	.310
	Positive	.310
	Negative	-.229
Kolmogorov-Smirnov Z		.759
Asymp. Sig. (2-tailed)		.612

a. Test distribution is Normal.

b. Calculated from data.

T-Test

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
pH	Hari ke 2	3	5.2667	.00577	.00333
	Minggu ke 4	3	5.5567	.04509	.02603

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
pH	Equal variances assumed	3.646	.129	-11.049	4	.000	-.29000	.02625	-.36287	-.21713
	Equal variances not assumed			-11.049	2.066	.007	-.29000	.02625	-.39956	-.18044

Formula 2

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
pH	6	4.7700	.20833	4.57	4.97

One-Sample Kolmogorov-Smirnov Test

		pH
N		6
Normal Parameters[a,,b]	Mean	4.7700
	Std. Deviation	.20833
Most Extreme Differences	Absolute	.306
	Positive	.306
	Negative	-.306
Kolmogorov-Smirnov Z		.750
Asymp. Sig. (2-tailed)		.627

a. Test distribution is Normal.

b. Calculated from data.

T-Test

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
pH	Hari ke 2	3	4.5800	.01000	.00577
	Minggu ke 4	3	4.9600	.01000	.00577

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
pH	Equal variances assumed	.000	1.000	-46.540	4	.000	-.38000	.00816	-.40267	-.35733
	Equal variances not assumed			-46.540	4.000	.000	-.38000	.00816	-.40267	-.35733

Formula 3

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
pH	6	5.1433	.18651	4.96	5.32

One-Sample Kolmogorov-Smirnov Test

		pH
N		6
Normal Parameters[a,,b]	Mean	5.1433
	Std. Deviation	.18651
Most Extreme Differences	Absolute	.314
	Positive	.294
	Negative	-.314
Kolmogorov-Smirnov Z		.770
Asymp. Sig. (2-tailed)		.594

a. Test distribution is Normal.

b. Calculated from data.

T-Test

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
pH	Hari ke 2	3	4.9733	.01528	.00882
	Minggu ke 4	3	5.3133	.00577	.00333

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

pH	Equal variances assumed	2.571	.184	-36.062	4	.000	-.34000	.00943	-.36618	-.31382
	Equal variances not assumed			-36.062	2.560	.000	-.34000	.00943	-.37314	-.30686

Lampiran 8. Data uji statistik sifat fisik formula optimum masker wajah *peel-off* ekstrak buah stroberi

Lampiran 8a. Data uji statistik viskositas formula optimum

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Viskositas (dPas)	3	336.66667	5.773503	330.000	340.000

One-Sample Kolmogorov-Smirnov Test

		Viskositas (dPas)
N		3
Normal Parameters[a,,b]	Mean	336.66667
	Std. Deviation	5.773503
Most Extreme Differences	Absolute	.385
	Positive	.282
	Negative	-.385
Kolmogorov-Smirnov Z		.667
Asymp. Sig. (2-tailed)		.766

a. Test distribution is Normal.

b. Calculated from data.

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Viskositas (dPas)	3	336.66667	5.773503	3.333333

One-Sample Test

	Test Value = 334.576					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Viskositas (dPas)	.627	2	.595	2.090667	-12.25151	16.43284

Lampiran 8b. Data uji statistik pergeseran viskositas formula optimum

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Pergeseran viskositas (%)	3	4.4400	1.42524	3.03	5.88

One-Sample Kolmogorov-Smirnov Test

		Pergeseran viskositas (%)
N		3
Normal Parameters[a,,b]	Mean	4.4400
	Std. Deviation	1.42524
Most Extreme Differences	Absolute	.177
	Positive	.175
	Negative	-.177
Kolmogorov-Smirnov Z		.307
Asymp. Sig. (2-tailed)		1.000

a. Test distribution is Normal.

b. Calculated from data.

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Pergeseran viskositas (%)	3	4.4400	1.42524	.82286

One-Sample Test

	Test Value = 2.94					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Pergeseran viskositas (%)	1.823	2	.210	1.50000	-2.0405	5.0405

Lampiran 8c. Data uji statistik daya sebar formula optimum

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Daya Sebar (cm)	3	4.1083	.05204	4.05	4.15

One-Sample Kolmogorov-Smirnov Test

		Daya Sebar (cm)
N		3
Normal Parameters[a,,b]	Mean	4.1083
	Std. Deviation	.05204
Most Extreme Differences	Absolute	.292
	Positive	.212
	Negative	-.292
Kolmogorov-Smirnov Z		.506
Asymp. Sig. (2-tailed)		.960

a. Test distribution is Normal.

b. Calculated from data.

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Daya Sebar (cm)	3	4.1083	.05204	.03005

One-Sample Test

	Test Value = 4.00					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Daya Sebar (cm)	3.606	2	.069	.10833	-.0209	.2376

Lampiran 8d. Data uji statistik waktu sediaan mengering formula optimum

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Waktu mengering (menit)	3	16.3233	.06658	16.25	16.38

One-Sample Kolmogorov-Smirnov Test

		Waktu mengering (menit)
N		3
Normal Parameters[a,,b]	Mean	16.3233
	Std. Deviation	.06658
Most Extreme Differences	Absolute	.265
	Positive	.198
	Negative	-.265
Kolmogorov-Smirnov Z		.460
Asymp. Sig. (2-tailed)		.984

a. Test distribution is Normal.

b. Calculated from data.

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Waktu mengering (menit)	3	16.3233	.06658	.03844

One-Sample Test

	Test Value = 16.25					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Waktu mengering (menit)	1.908	2	.197	.07333	-.0921	.2387

Lampiran 9. Data penimbangan dan pembuatan larutan DPPH

Penimbangan serbuk DPPH

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

Molaritas (M) $= \frac{\text{mol}}{\text{volume}} = \frac{\text{bobot serbuk DPPH (gram)}}{\text{BM DPPH x volume (liter)}}$

0,4 mM $= \frac{\text{bobot}}{394{,}32 \text{ x } 0{,}05}$

Bobot = 0,0004 x 394,32 x 0,05

= 0,00789 gram

Pembuatan larutan DPPH

Serbuk DPPH yang ditimbang sebanyak 0,00789 gram dilarutkan dengan metanol (p.a.) sampai tanda batas pada labu takar 50 mL.

Lampiran 10. Data pembuatan larutan induk rutin

Serbuk rutin yang ditimbang sebanyak 0,625 mg dilarutkan dengan metanol (p.a.) sampai tanda batas dalam labu takar 25 mL. Konsentrasi yang diperoleh sebesar 25 ppm. Larutan induk rutin 25 ppm dibuat seri konsentrasi : 1 ppm, 2 ppm, 3 ppm, 4 ppm, dan 5 ppm.

Konsentrasi 1 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 1 ppm = V_2 x 25 ppm
V_2 = 0,4 mL

Larutan induk 25 ppm dipipet 0,4 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 2 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 2 ppm = V_2 x 25 ppm
V_2 = 0,8 mL

Larutan induk 25 ppm dipipet 0,8 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 3 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 3 ppm = V_2 x 25 ppm
V_2 = 1,2 mL

Larutan induk 25 ppm dipipet 1,2 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 4 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 4 ppm = V_2 x 25 ppm
V_2 = 1,6 mL

Larutan induk 25 ppm dipipet 1,6 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 5 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 5 ppm = V_2 x 25 ppm
V_2 = 2 mL

Larutan induk 25 ppm dipipet 2 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Lampiran 11. Data pembuatan larutan induk ekstrak buah stroberi

Ekstrak ditimbang sebanyak 250 mg dilarutkan dengan metanol (p.a.) sampai tanda batas dalam labu takar 25 mL. Konsentrasi yang diperoleh sebesar 10000 ppm. Larutan induk ekstrak 10000 ppm dibuat seri konsentrasi : 250ppm, 500 ppm, 750 ppm, 1000 ppm, 1250 ppm, 1500 ppm, 1750 ppm, 2000 ppm, 2500 ppm, 3000 ppm, dan 3500 ppm.

Konsentrasi 250 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 250 ppm = V_2 x 10000 ppm
V_2 = 0,25 mL

Larutan induk 10000 ppm dipipet 0,25 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 500 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 500 ppm = V_2 x 10000 ppm
V_2 = 0,5 mL

Larutan induk 10000 ppm dipipet 0,5 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 750 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 750 ppm = V_2 x 10000 ppm
V_2 = 0,75 mL

Larutan induk 10000 ppm dipipet 0,75 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 1000 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 1000 ppm = V_2 x 10000 ppm
V_2 = 1 mL

Larutan induk 10000 ppm dipipet 1 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 1250 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 1250 ppm = V_2 x 10000 ppm
V_2 = 1,25 mL

Larutan induk 10000 ppm dipipet 1,25 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 1500 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 1500 ppm = V_2 x 10000 ppm
V_2 = 1,5 mL

Larutan induk 10000 ppm dipipet 1,5 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 1750 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 1750 ppm = V_2 x 10000 ppm
V_2 = 1,75 mL

Larutan induk 10000 ppm dipipet 1,75 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 2000 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 2000 ppm = V_2 x 10000 ppm
V_2 = 2 mL

Larutan induk 10000 ppm dipipet 2 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 2500 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 2500 ppm = V_2 x 10000 ppm
V_2 = 2,5 mL

Larutan induk 10000 ppm dipipet 2,5 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 3000 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 3000 ppm = V_2 x 10000 ppm
V_2 = 3 mL

Larutan induk 10000 ppm dipipet 3 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 3500 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 3500 ppm = V_2 x 10000 ppm
V_2 = 3,5 mL

Larutan induk 10000 ppm dipipet 3,5 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Lampiran 12. Data pembuatan larutan induk formula optimum masker wajah *peel-off* ekstrak buah stroberi

Formula optimum masker wajah *peel-off* ditimbang sebanyak 15 gram dilarutkan dengan metanol (p.a.) sampai tanda batas dalam labu takar 50 mL. Konsentrasi yang diperoleh sebesar 3000 ppm. Larutan induk formula optimum dibuat seri konsentrasi: 500 ppm; 1000 ppm; 2000 ppm; dan 3000 ppm.

Konsentrasi 500 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 500 ppm = V_2 x 3000 ppm
V_2 = 1,66 mL

Larutan induk 3000 ppm dipipet 1,66 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 1000 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 1000 ppm = V_2 x 3000 ppm
V_2 = 3,33 mL

Larutan induk 3000 ppm dipipet 3,33 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 2000 ppm

$V_1 \times N_1 = V_2 \times N_2$
10 x 2000 ppm = V_2 x 3000 ppm
V_2 = 6,66 mL

Larutan induk 3000 ppm dipipet 6,66 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

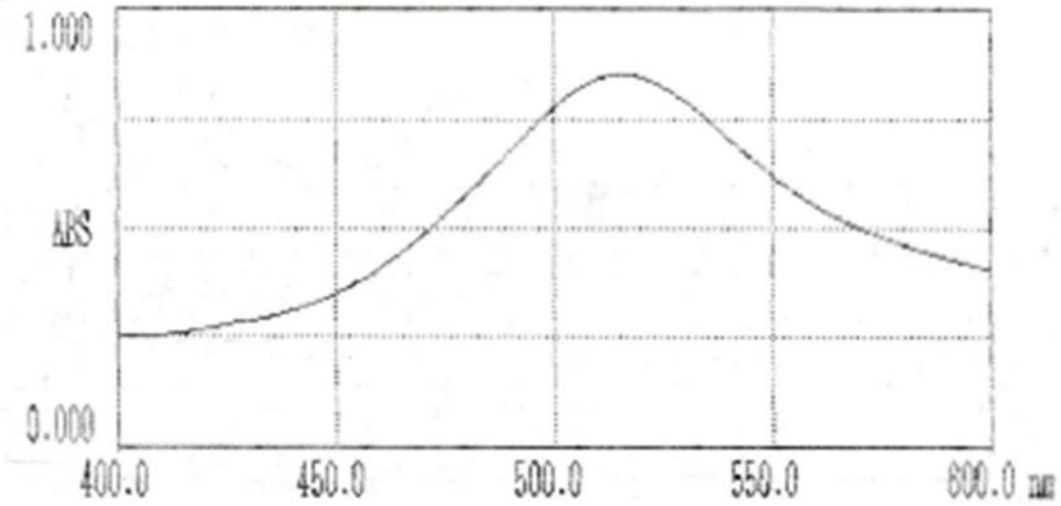
Konsentrasi 3000 ppm

Larutan induk 3000 ppm dipipet sebanyak 1 mL.

Lampiran 13. Data penetapan λ maksimum DPPH

Model U-2900 Spectrophotometer

Serial No.	2HE64-002
Program No.	2J15301-05
Name	LAMDA-MAX
Run Date	2014/08/27 14:07
Report Date	2014/08/27 14:17
Operator	

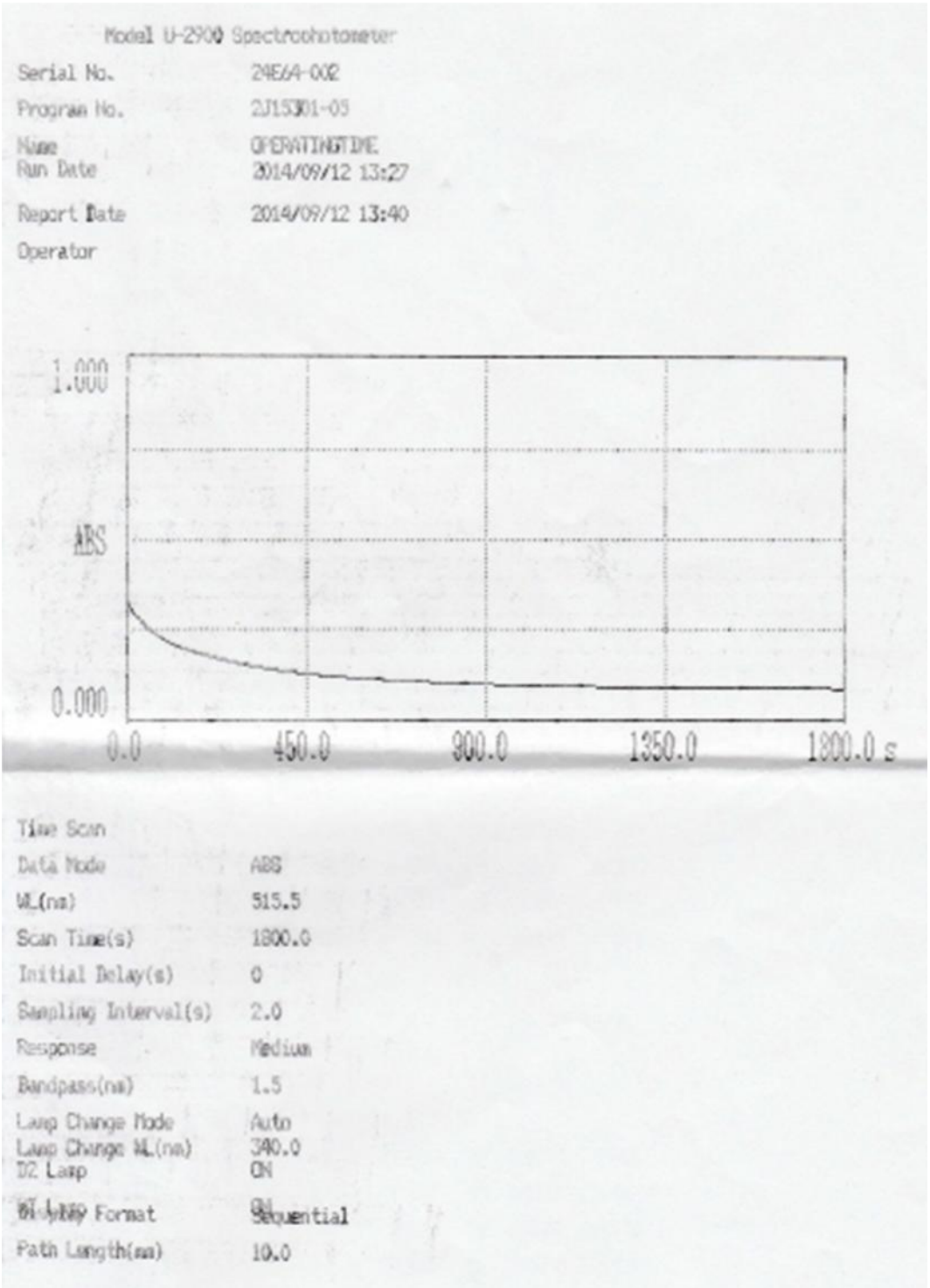


Peak (Threshold:0.001 Sensitivity:1)

ID	WL(nm)	ABS
1	515.5	0.856

Lampiran 14. Data penetapan *operating time*

Lampiran 14a. *Operating time* rutin



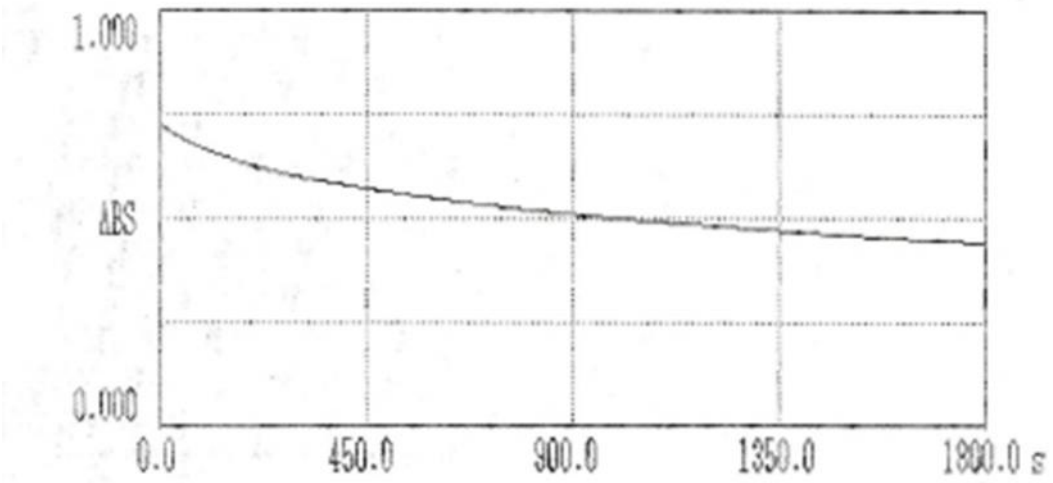
Data

ID	TIME(s)	ABS	ID	TIME(s)	ABS	ID	TIME(s)	ABS
1	0.0	0.334	2	60.0	0.250	3	120.0	0.212
4	180.0	0.188	5	240.0	0.169	6	300.0	0.155
7	360.0	0.144	8	420.0	0.135	9	480.0	0.128
10	540.0	0.123	11	600.0	0.118	12	660.0	0.114
13	720.0	0.111	14	780.0	0.108	15	840.0	0.106
16	900.0	0.103	17	960.0	0.101	18	1020.0	0.100
19	1080.0	0.098	20	1140.0	0.097	21	1200.0	0.096
22	1260.0	0.095	23	1320.0	0.094	24	1380.0	0.093
25	1440.0	0.092	26	1500.0	0.092	27	1560.0	0.091
28	1620.0	0.091	29	1680.0	0.090	30	1740.0	0.090
31	1800.0	0.090						

Lampiran 14b. *Operating time* ekstrak buah stroberi

Model U-2900 Spectrophotometer

Serial No.	24564-002
Program No.	2J15301-05
Name	OPERATINGTIME
Run Date	2014/08/27 14:57
Report Date	2014/08/27 15:02
Operator	



Time Scan	
Data Mode	ABS
WL(nm)	515.5
Scan Time(s)	1800.0
Initial Delay(s)	0
Sampling Interval(s)	2.0
Response	Medium
Bandpass(nm)	1.5
Lamp Change Mode	Auto
Lamp Change WL(nm)	340.0
D2 Lamp	ON
WI Lamp	ON
Display Format	Sequential
Path Length(mm)	10.0

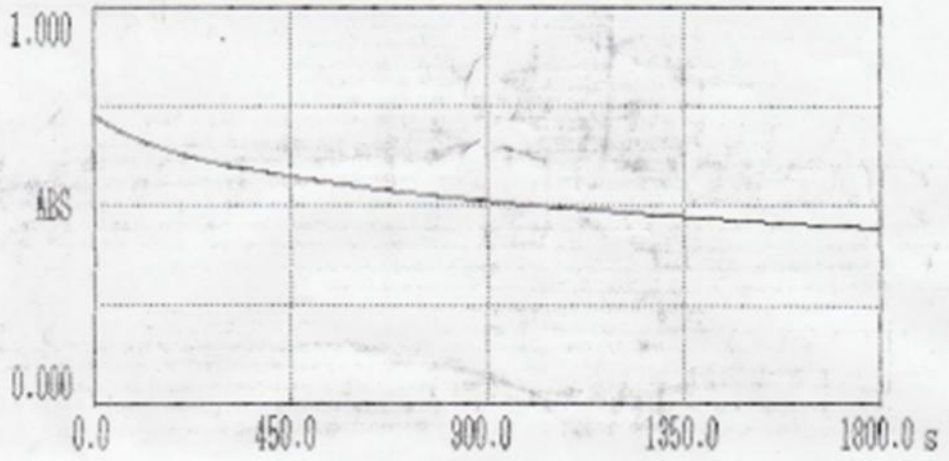
Data List (List Interval(s):60.0)

ID	TIME(s)	ABS	ID	TIME(s)	ABS	ID	TIME(s)	ABS
1	0.0	0.730	2	60.0	0.689	3	120.0	0.660
4	180.0	0.638	5	240.0	0.621	6	300.0	0.605
7	360.0	0.591	8	420.0	0.580	9	480.0	0.568
10	540.0	0.559	11	600.0	0.550	12	660.0	0.542
13	720.0	0.534	14	780.0	0.526	15	840.0	0.520
16	900.0	0.514	17	960.0	0.507	18	1020.0	0.502
19	1080.0	0.496	20	1140.0	0.491	21	1200.0	0.486
22	1260.0	0.481	23	1320.0	0.476	24	1380.0	0.473
25	1440.0	0.468	26	1500.0	0.464	27	1560.0	0.460
28	1620.0	0.456	29	1680.0	0.452	30	1740.0	0.449
31	1800.0	0.449						

Lampiran 14c. *Operating time* formula optimum

Model U-2900 Spectrophotometer

Serial No.	2AEA-002
Program No.	2J15301-05
Name	OPERATINGTIME
Run Date	2014/11/27 14:57
Report Date	2014/11/27 15:00
Operator	



Time Scan	
Data Mode	ABS
WL(nm)	315.5
Scan Time(s)	1800.0
Initial Delay(s)	0
Sampling Interval(s)	2.0
Response	Medium
Bandpass(nm)	1.5
Lamp Change Mode	Auto
Lamp Change WL(nm)	340.0
D2 Lamp	ON
WI Lamp	ON
Display Format	Sequential
Path Length(mm)	10.0

Data List (List Interval(s):60.0)

ID	TIME(s)	ABS	ID	TIME(s)	ABS	ID	TIME(s)	ABS
1	0.0	0.642	2	60.0	0.633	3	120.0	0.624
4	180.0	0.616	5	240.0	0.609	6	300.0	0.602
7	360.0	0.596	8	420.0	0.590	9	480.0	0.585
10	540.0	0.580	11	600.0	0.575	12	660.0	0.570
13	720.0	0.566	14	780.0	0.562	15	840.0	0.558
16	900.0	0.554	17	960.0	0.550	18	1020.0	0.547
19	1080.0	0.544	20	1140.0	0.540	21	1200.0	0.537
22	1260.0	0.534	23	1320.0	0.531	24	1380.0	0.528
25	1440.0	0.526	26	1500.0	0.523	27	1560.0	0.520
28	1620.0	0.517	29	1680.0	0.515	30	1740.0	0.513
31	1800.0	0.510						

Lampiran 15. Data perhitungan nilai IC_{50} rutin

	Absorbansi			% Inhibisi		
Konsentrasi (ppm)	Rep 1	Rep 2	Rep 3	Rep 1	Rep 2	Rep 3
1	0,714	0,738	0,659	11,08344	8,094645	17,93275
2	0,555	0,601	0,569	30,88418	25,15567	29,14072
3	0,439	0,436	0,439	45,33001	45,70361	45,33001
4	0,305	0,312	0,31	62,01743	61,1457	61,39477
5	0,168	0,165	0,169	79,07846	79,45205	78,95392

Contoh perhitungan % inhibisi

Inhibisi (%) $= \frac{\text{Absorbansi blanko} - \text{Absorbansi sampel}}{\text{Absorbansi blanko}} \times 100\ \%$

Absorbansi blanko (DPPH) = 0,803

Konsentrasi 1 ppm, % inhibisi $= \frac{0{,}803 - 0{,}714}{0{,}803} \times 100\ \%$

$= 11{,}08344\ \%$

Konsentrasi (ppm)	% inhibisi rata-rata
1	12,37028
2	28,39352
3	45,45455
4	61,5193
5	79,16148

Regresi Linier Konsentrasi versus %inhibisi: a = -4,632

b = 16,670

r = 0,999

y = a + bx

50 = -4,632 + 16,670 x

54,632 = 16,670 x

x = 3,277

IC_{50} rutin = 3,277 µg/mL

Lampiran 16. Data absorbansi ekstrak buah stroberi

Absorbansi

	rep1		rep2		rep3	
konsentrasi	pemb 1.	pemb 2.	pemb 1.	pemb 2.	pemb 1.	pemb 2.
500	0.559	0.563	0.58	0.582	0.584	0.585
750	0.51	0.512	0.519	0.521	0.485	0.49
1000	0.408	0.41	0.438	0.44	0.414	0.412
1250	0.321	0.322	0.376	0.377	0.34	0.34
1500	0.281	0.281	0.28	0.28	0.281	0.279
1750	0.227	0.228	0.25	0.248	0.243	0.242
2000	0.157	0.158	0.152	0.153	0.192	0.193
2500	0.105	0.104	0.103	0.103	0.103	0.107
3000	0.09	0.088	0.084	0.085	0.086	0.088
3500	0.061	0.062	0.064	0.063	0.065	0.066
250	0.589	0.593	0.593	0.595	0.596	0.597

Inhibisi

rep1		rep2		rep3	
pemb 1.	pemb 2.	pemb 1.	pemb 2.	pemb 1.	pemb 2.
26.9281	26.40523	24.18301	23.92157	23.66013	23.52941
33.33333	33.0719	32.15686	31.89542	36.60131	35.94771
46.66667	46.40523	42.7451	42.48366	45.88235	46.14379
58.03922	57.9085	50.84967	50.71895	55.55556	55.55556
63.26797	63.26797	63.39869	63.39869	63.26797	63.52941
70.3268	70.19608	67.32026	67.5817	68.23529	68.36601
79.47712	79.34641	80.13072	80	74.90196	74.77124
86.27451	86.40523	86.53595	86.53595	86.53595	86.01307
88.23529	88.49673	89.01961	88.88889	88.75817	88.49673
92.02614	91.89542	91.63399	91.76471	91.50327	91.37255
23.00654	22.48366	22.48366	22.22222	22.0915	21.96078

	inhibisi		
rep1	rep2	rep3	rata2
26.66667	24.05229	23.59477	24.77124
33.20261	32.02614	36.27451	33.83442
46.53595	42.61438	46.01307	45.05447
57.97386	50.78431	55.55556	54.77124
63.26797	63.39869	63.39869	63.35512
70.26144	67.45098	68.30065	68.67102
79.41176	80.06536	74.8366	78.10458
86.33987	86.53595	86.27451	86.38344
88.36601	88.95425	88.62745	88.64924
91.96078	91.69935	91.43791	91.69935
22.7451	22.35294	22.02614	22.37473

konsentrasi	inhibisi
250	22.37473
500	24.77124
750	33.83442
1000	45.05447
1250	54.77124
1500	63.35512
1750	68.67102
2000	78.10458
2500	86.38344
3000	88.64924
3500	91.69935

absorbansi blanko DPPH	
	0.77
	0.764
	0.763
	0.765
	0.763
	0.763
rata2	0.764667

Lampiran 17. Data konsentrasi dan % inhibisi ekstrak buah stroberi dengan program *Sigmaplot version* 12

Konsentrasi	% inhibisi	Konsentrasi	% inhibisi	Konsentrasi	% inhibisi
0	16,3018	1406,25	59,5208	2812,5	88,4352
39,0625	16,9071	1445,313	60,9537	2851,563	88,6902
78,125	17,5468	1484,375	62,3598	2890,625	88,929
117,1875	18,2221	1523,438	63,7362	2929,688	89,1526
156,25	18,934	1562,5	65,0804	2968,75	89,3618
195,3125	19,6838	1601,563	66,3903	3007,813	89,5575
234,375	20,4724	1640,625	67,6639	3046,875	89,7405
273,4375	21,3007	1679,688	68,8996	3085,938	89,9115
312,5	22,1696	1718,75	70,096	3125	90,0714
351,5625	23,0796	1757,813	71,2519	3164,063	90,2207
390,625	24,0314	1796,875	72,3667	3203,125	90,3603
429,6875	25,0251	1835,938	73,4398	3242,188	90,4905
468,75	26,0609	1875	74,4708	3281,25	90,6122
507,8125	27,1388	1914,063	75,4598	3320,313	90,7257
546,875	28,2583	1953,125	76,4067	3359,375	90,8317
585,9375	29,4189	1992,188	77,3121	3398,438	90,9305
625	30,6198	2031,25	78,1763	3437,5	91,0228
664,0625	31,8599	2070,313	79,0001	3476,563	91,1088
703,125	33,1377	2109,375	79,7842	3515,625	91,1891
742,1875	34,4516	2148,438	80,5296	3554,688	91,2639
781,25	35,7997	2187,5	81,2373	3593,75	91,3337
820,3125	37,1796	2226,563	81,9085	3632,813	91,3988
859,375	38,5888	2265,625	82,5442	3671,875	91,4594
898,4375	40,0247	2304,688	83,1457	3710,938	91,5159
937,5	41,484	2343,75	83,7143	3750	91,5686
976,5625	42,9637	2382,813	84,2512	3789,063	91,6177
1015,625	44,4602	2421,875	84,7578	3828,125	91,6635
1054,688	45,9699	2460,938	85,2354	3867,188	91,7061
1093,75	47,4891	2500	85,6852	3906,25	91,7458
1132,813	49,0139	2539,063	86,1086	3945,313	91,7828
1171,875	**50,5405**	2578,125	86,5069	3984,375	91,8173
1210,938	52,0649	2617,188	86,8812	4023,438	91,8494
1250	53,5832	2656,25	87,2328	4062,5	91,8794
1289,063	55,0916	2695,313	87,5629	4101,563	91,9072
1328,125	56,5864	2734,375	87,8726	4140,625	91,9332
1367,188	58,0639	2773,438	88,163	4179,688	91,9574

Konsentrasi	% inhibisi	Konsentrasi	% inhibisi	Konsentrasi	% inhibisi
4218,75	91,9799	5820,313	92,2678	7421,875	92,2831
4257,813	92,0008	5859,375	92,269	7460,938	92,2832
4296,875	92,0204	5898,438	92,27	7500	92,2832
4335,938	92,0386	5937,5	92,271	7539,063	92,2833
4375	92,0555	5976,563	92,2719	7578,125	92,2833
4414,063	92,0713	6015,625	92,2727	7617,188	92,2834
4453,125	92,0859	6054,688	92,2735	7656,25	92,2834
4492,188	92,0996	6093,75	92,2742	7695,313	92,2835
4531,25	92,1123	6132,813	92,2749	7734,375	92,2835
4570,313	92,1242	6171,875	92,2755	7773,438	92,2835
4609,375	92,1352	6210,938	92,2761	7812,5	92,2836
4648,438	92,1455	6250	92,2766	7851,563	92,2836
4687,5	92,1551	6289,063	92,2772	7890,625	92,2836
4726,563	92,164	6328,125	92,2776	7929,688	92,2836
4765,625	92,1723	6367,188	92,2781	7968,75	92,2837
4804,688	92,18	6406,25	92,2785	8007,813	92,2837
4843,75	92,1872	6445,313	92,2789	8046,875	92,2837
4882,813	92,1939	6484,375	92,2792	8085,938	92,2837
4921,875	92,2001	6523,438	92,2795	8125	92,2837
4960,938	92,2059	6562,5	92,2798	8164,063	92,2838
5000	92,2113	6601,563	92,2801	8203,125	92,2838
5039,063	92,2163	6640,625	92,2804	8242,188	92,2838
5078,125	92,221	6679,688	92,2806	8281,25	92,2838
5117,188	92,2253	6718,75	92,2809	8320,313	92,2838
5156,25	92,2294	6757,813	92,2811	8359,375	92,2838
5195,313	92,2332	6796,875	92,2813	8398,438	92,2838
5234,375	92,2367	6835,938	92,2815	8437,5	92,2838
5273,438	92,24	6875	92,2816	8476,563	92,2839
5312,5	92,243	6914,063	92,2818	8515,625	92,2839
5351,563	92,2458	6953,125	92,282	8554,688	92,2839
5390,625	92,2485	6992,188	92,2821	8593,75	92,2839
5429,688	92,2509	7031,25	92,2822	8632,813	92,2839
5468,75	92,2532	7070,313	92,2824	8671,875	92,2839
5507,813	92,2553	7109,375	92,2825	8710,938	92,2839
5546,875	92,2573	7148,438	92,2826	8750	92,2839
5585,938	92,2592	7187,5	92,2827	8789,063	92,2839
5625	92,2609	7226,563	92,2828	8828,125	92,2839
5664,063	92,2625	7265,625	92,2828	8867,188	92,2839
5703,125	92,264	7304,688	92,2829	8906,25	92,2839
5742,188	92,2653	7343,75	92,283	8945,313	92,2839
5781,25	92,2666	7382,813	92,2831	8984,375	92,2839

Konsentrasi	% inhibisi
9023,438	92,2839
9062,5	92,2839
9101,563	92,2839
9140,625	92,2839
9179,688	92,2839
9218,75	92,2839
9257,813	92,284
9296,875	92,284
9335,938	92,284
9375	92,284
9609,375	92,284
9648,438	92,284
9687,5	92,284
9726,563	92,284
9765,625	92,284
9804,688	92,284
9843,75	92,284
9882,813	92,284
9921,875	92,284
9960,938	92,284
10000	**92,284**

Nilai IC_{50} ekstrak etanol 96% buah stroberi adalah:

y $= y0 + \frac{a}{1+e^{-\frac{(x-x0)}{b}}}$

50 $= 7{,}0967 + \frac{85{,}1873}{1+e^{-\frac{(x-150{,}1195)}{544{,}8895}}}$

42,9033 $= \frac{85{,}1873}{1+e^{-\frac{(x-150{,}1195)}{544{,}8895}}}$

x $= 1009{,}252\ \mu g/mL$

Tiap formula mengandung dosis 1% ekstrak = 10.000 ppm, % inhibisi = 92,284 %

Jadi ekstrak etanol 96% buah stroberi hanya dapat menghambat maksimal 92,284% radikal bebas.

Lampiran 18. Data perhitungan nilai IC_{50} formula optimum masker wajah *peel-off* ekstrak buah stroberi

	absorbansi			inhibisi (%)		
Konsentrasi	rep 1	rep 2	rep 3	rep 1	rep 2	rep 3
250	0,689	0,689	0,692	6,002729	6,002729	5,593452
1000	0,586	0,585	0,586	20,05457	20,191	20,05457
2000	0,404	0,406	0,407	44,88404	44,61119	44,47476
3000	0,201	0,2	0,201	72,57844	72,71487	72,57844

Contoh perhitungan % inhibisi:

Inhibisi (%) $= \frac{\text{Absorbansi blanko} - \text{Absorbansi sampel}}{\text{Absorbansi blanko}} \times 100\ \%$

Absorbansi blanko (DPPH) = 0,733

Konsentrasi 250 ppm, % inhibisi $= \frac{0{,}733 - 0{,}689}{0{,}733} \times 100\ \%$

= 6,002729 %

% inhibisi rata-rata	konsentrasi	Log konsentrasi	probit
5,866303	250	2,397	3,45
20,10005	1000	3	4,16
44,65666	2000	3,301	4,87
72,62392	3000	3,477	5,61

Regresi Linier Log konsentrasi vs Probit: a = - 1,212

b = 1,884

r = 0,962

y = a + bx

5 = - 1,212 + 1,884 x

6,212 = 1,884 x

x = 3,297

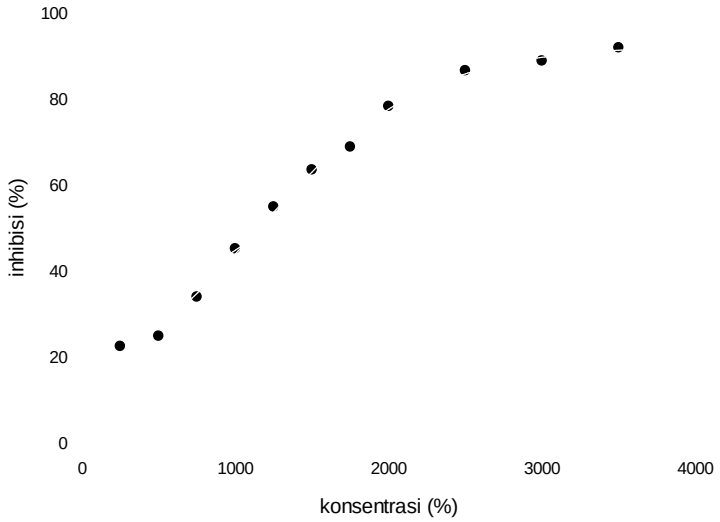
IC_{50} formula optimum = antilog x

= antilog 3,297

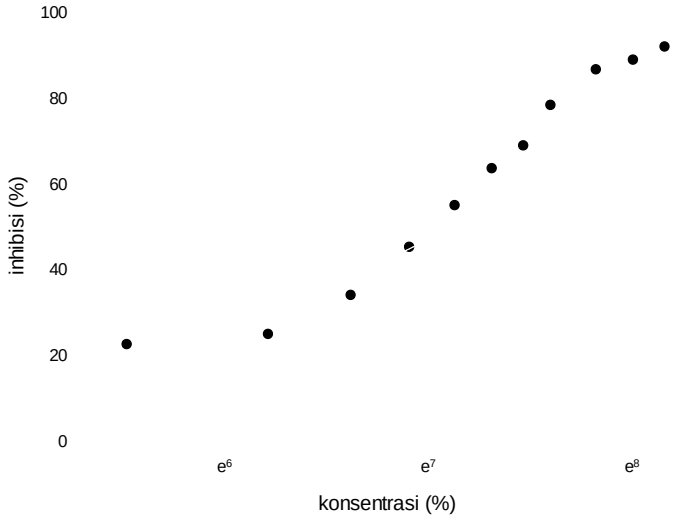
= 1981,527 µg/mL

Lampiran 19. Pemodelan kurva dengan program *Sigmaplot version* 12

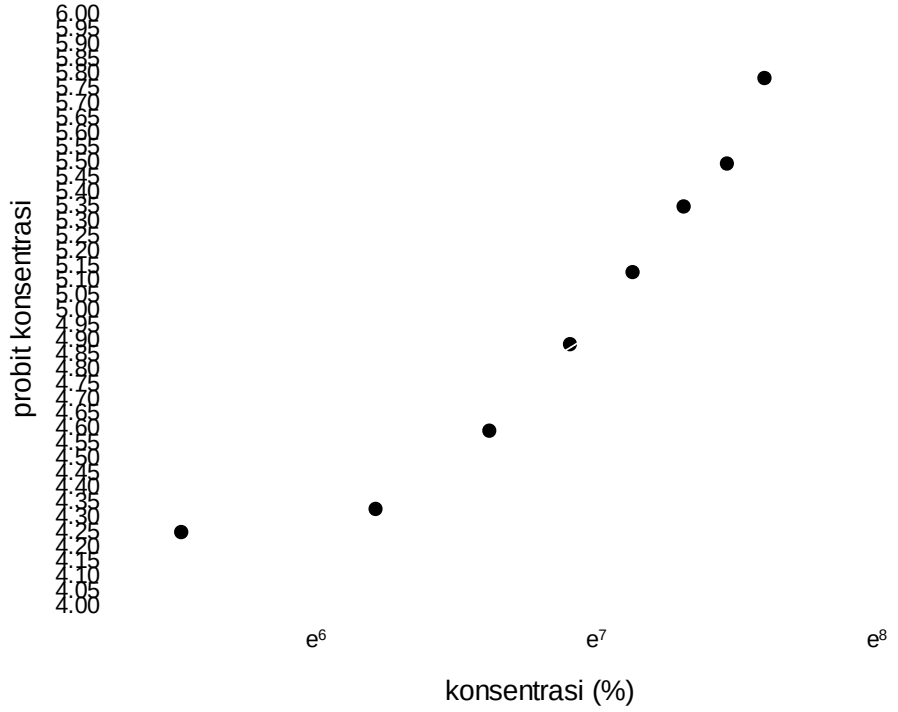
Perbandingan *fitting* model kurva konsentrasi dan % inhibisi ekstrak etanol 96% buah stroberi antara model sigmoid dengan model linier



Fitting model kurva log konsentrasi dan % inhibisi ekstrak etanol 96% buah stroberi dengan model logaritmik



Fitting model kurva log konsentrasi dan probit ekstrak etanol 96% buah stroberi dengan model logaritmik



Lampiran 20. Data perhitungan pembuatan larutan CH_3COOK

Konsentrasi larutan = 1 mol/L

BM CH_3COOK = 98

Mol $= \frac{\text{gram}}{\text{BM}}$

1 $= \frac{\text{gram}}{98}$

gram = 98

98 gram serbuk CH_3COOK untuk 1000 mL

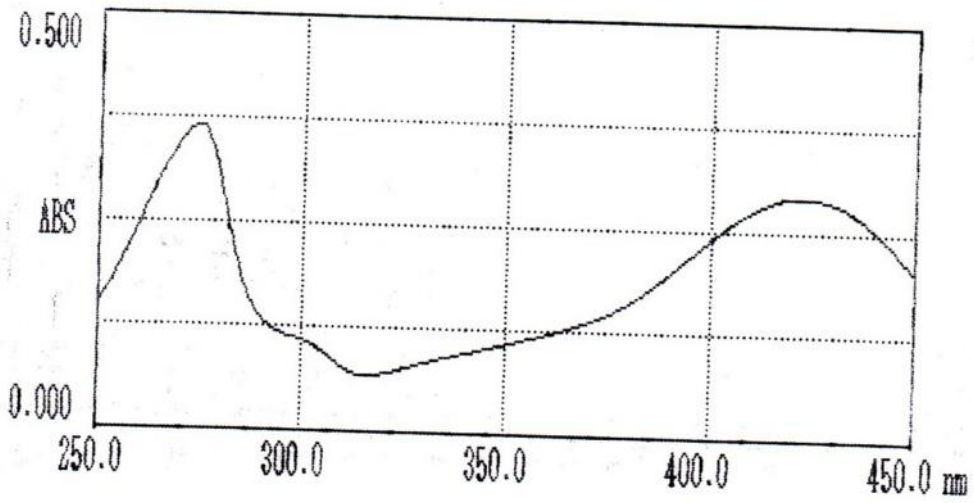
Jika membuat larutan sebanyak 25 mL $= \frac{25\ \text{mL}}{1000\ \text{mL}}$ x 98 gram

$=$ 2,45 gram

Lampiran 21. Data penetapan λ maksimum rutin

Model U-2900 Spectrophotometer

Serial No.	24E64-002
Program No.	2J15301-05
Name	AS
Run Date	2014/10/22 13:04
Report Date	2014/10/22 13:06
Operator	



Peak (Threshold:0.001 Sensitivity:1)

ID	WL(nm)	ABS	ID	WL(nm)	ABS	ID	WL(nm)	ABS
1	422.0	0.295	2	274.5	0.368	3	213.0	0.492

Lampiran 22. Data pembuatan kurva baku rutin

Serbuk rutin yang ditimbang sebanyak 10 mg dilarutkan dengan metanol (p.a.) sampai tanda batas dalam labu takar 50 mL. Konsentrasi yang diperoleh sebesar 200 ppm. Larutan induk rutin 200 ppm dibuat seri konsentrasi : 5 ppm; 7,5 ppm; 10 ppm; 15 ppm; 20 ppm; dan 25 ppm.

Larutan induk rutin 200 ppm dipipet 6,25 mL dimasukkan ke dalam labu ukur 25 mL ditambah dengan metanol (p.a.) sampai tanda batas. Konsenrasi larutan induk rutin menjadi 25 ppm.

Konsentrasi 5 ppm

$V_1 \times N_1 = V_2 \times N_2$
$10 \times 5 \text{ ppm} = V_2 \times 25 \text{ ppm}$
$V_2 = 2 \text{ mL}$

Larutan induk 200 ppm dipipet 2 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 7,5ppm

$V_1 \times N_1 = V_2 \times N_2$
$10 \times 7{,}5 \text{ ppm} = V_2 \times 25 \text{ ppm}$
$V_2 = 3 \text{ mL}$

Larutan induk 200 ppm dipipet 3 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 10 ppm

$V_1 \times N_1 = V_2 \times N_2$
$10 \times 10 \text{ ppm} = V_2 \times 25 \text{ ppm}$
$V_2 = 4 \text{ mL}$

Larutan induk 200 ppm dipipet 4 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 15 ppm

V_1 x N_1 = V_2 x N_2
10 x 15 ppm = V_2 x 25 ppm
V_2 = 6 mL

Larutan induk 200 ppm dipipet 6 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 20 ppm

V_1 x N_1 = V_2 x N_2
10 x 20 ppm = V_2 x 25 ppm
V_2 = 8 mL

Larutan induk 200 ppm dipipet 8 mL kemudian dimasukkan ke dalam labu takar 10 mL ditambah dengan metanol (p.a.) sampai tanda batas.

Konsentrasi 25 ppm

Larutan induk rutin 25 ppm dipipet sebanyak 0,5 mL.

Pembacaan absorbansi pada λ 422 nm

Konsentrasi	Absorbansi			Rata-rata absorbansi
	1	2	3	
5	0,188	0,189	0,192	0,190
7,5	0,26	0,262	0,265	0,262
10	0,315	0,318	0,321	0,318
15	0,518	0,523	0,525	0,522
20	0,689	0,695	0,697	0,694
25	0,871	0,874	0,879	0,875

RL konsentrasi vs absorbansi

a = -0,0020

b = 0,0348

r = 0,9984

Lampiran 23. Data penetapan kadar flavonoid total dalam ekstrak buah stroberi

Perlakuan	Absorbansi	Kadar flavonoid (ppm)	Jumlah flavonoid(mg)	Persen dalam ekstrak (%)
Replikasi 1	0,193	5,603	0,280	0,560
Replikasi 2	0,206	5,977	0,299	0,598
Replikasi 3	0,211	6,121	0,306	0,612
		Rata-rata	0,295	0,590
		SD	0,013	0,027

Perhitungan kadar flavonoid total pada ekstrak buah stroberi:

Replikasi 1, absorbansi = 0,193

Y = a + bx

0,193 = -0,0020 + 0,0348 x

x = 5,603 ppm

Replikasi 2, absorbansi = 0,206

Y = a + bx

0,206 = -0,0020 + 0,0348 x

x = 5,977 ppm

Replikasi 3, absorbansi = 0,211

Y = a + bx

0,211 = -0,0020 + 0,0348 x

x = 6,121 ppm

Perhitungan jumlah flavonoid total pada ekstrak buah stroberi:

Replikasi 1

$$\frac{50\ mL\ x\ kadar}{1000} = \frac{50\ mL\ x\ 5{,}603}{1000} = 0{,}280\ mg$$

Replikasi 2

$$\frac{50\ mL\ x\ kadar}{1000} = \frac{50\ mL\ x\ 5{,}977}{1000} = 0{,}299\ mg$$

Replikasi 3

$$\frac{50\ mL\ x\ kadar}{1000} = \frac{50\ mL\ x\ 6{,}121}{1000} = 0{,}306\ mg$$

Perhitungan persen flavonoid total pada ekstrak buah stroberi:

Replikasi 1

$$\frac{jumlah}{50}\ x\ 100\% = \frac{0{,}280\ mg}{50}\ x\ 100\% = 0{,}560\%$$

Replikasi 2

$$\frac{jumlah}{50}\ x\ 100\% = \frac{0{,}299\ mg}{50}\ x\ 100\% = 0{,}598\%$$

Replikasi 3

$$\frac{jumlah}{50}\ x\ 100\% = \frac{0{,}306\ mg}{50}\ x\ 100\% = 0{,}612\%$$

Lampiran 24. Tabel probit

%	0	1	2	3	4	5	6	7	8	9
0	-	2.67	2.95	3,12	3,25	3.36	3.45	3.52	3.59	3.66
10	3.72	3.77	3.82	3.87	3.92	3.96	4.01	4.05	4.08	4.12
20	4.16	4.19	4.23	4.26	4.29	4.33	4.36	4.39	4.42	4.45
30	4.48	4.50	4.53	4.56	4.59	4.61	4.64	4.67	4.69	4.72
40	4.75	4.77	4.80	4.82	4.85	4.87	4.90	4.92	4.95	4.97
50	5.00	5.03	5.05	5.08	5.10	5.13	5.15	5.18	5.20	5.23
60	5.25	5.28	5.31	5.33	5.36	5.39	5.41	5.44	5.47	5.50
70	5.52	5.55	5.58	5.61	5.64	5.67	5.71	5.74	5.77	5.81
80	5.84	5.88	5.92	5.95	5.99	6.04	6.08	6.13	6.18	6.23
90	6.28	6.34	6.41	6.48	6.55	6.64	6.75	6.88	7.05	7.33
-	**0.0**	**0.1**	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0,7**	**0.8**	**0.9**
99	7.33	7.37	7.41	7.46	7.51	7.58	7.65	7.75	7.88	8.09

Lampiran 25. Waktu mengering sediaan masker wajah *peel-off* ekstrak buah stroberi

F1

F2

F3

Formula optimum

Produk Pasaran

Sampel	Ketebalan (mm)
F1	0,492
F2	0,250
F3	0,630
Formula optimum	0,281
Produk pasaran	0,211

Lampiran 26. Nilai koefisien (a,b,r) kurva sigmoid ekstrak buah stroberi

Nonlinear Regression **Friday, October 03, 2014, 7:47:29 AM**

Data Source: Data 1 in Notebook1
Equation: Sigmoidal, Sigmoid, 4 Parameter
f = y0+a/(1+exp(-(x-x0)/b))

R	Rsqr	Adj Rsqr	Standard Error of Estimate
0.9986	0.9972	0.9960	1.6199

	Coefficient	Std. Error	t	P
a	85.1873	6.6107	12.8862	<0.0001
b	544.8895	60.5855	8.9937	<0.0001
x0	1150.1195	78.6750	14.6186	<0.0001
y0	7.0967	5.5917	1.2691	0.2450

Analysis of Variance:

	DF	SS	MS
Regression	4	45829.8976	11457.4744
Residual	7	18.3692	2.6242
Total	11	45848.2668	4168.0243

Corrected for the mean of the observations:

	DF	SS	MS	F	P
Regression	3	6509.1421	2169.7140	826.8178	<0.0001
Residual	7	18.3692	2.6242		
Total	10	6527.5113	652.7511		

Statistical Tests:

Normality Test (Shapiro-Wilk) Passed

(P = 0.0954) W Statistic= 0.8771 Significance Level =

0.0500

Constant Variance Test Failed (P = 0.0427)