L A M P I R A N

Lampiran 1. ***Certificate of Analysis*** **minyak biji jinten hitam**

Certificate of Analysis (COA)

PRODUCT IDENTIFICATION	
Name:	Black seed oil
Customer:	PT Darjeeling Sembrani Aroma
Batch no:	1119-122-BLAIND
TEST	
Colour	Dark yellow to brown liquid
Relative density	0.918
Refractive index	1.473
FATTY ACID COMPOSITON (GC of FAME's)	
Margaric acid	10.25%
Stearic acid	2.40%
Oleic acid	20.10%
Linoleic acid	50.10%
cis-11, 14-eicosadienoic acid	7.75%

Lampiran 2. Hasil identifikasi GC-MS minyak biji jinten hitam

PEMERINTAH PROVINSI JAWA TENGAH
DINAS PERINDUSTRIAN DAN PERDAGANGAN
BALAI PENGUJIAN DAN SERTIFIKASI MUTU BARANG SURAKARTA
LABORATORIUM PENGUJI BPSMB SURAKARTA
Jalan Pajang - Kartasura km. 8 Pabelan, Kartasura, Sukoharjo Kode Pos 57169
Telepon (0271-743959, 7881626 Faksimile (0271-7880662
Surat Elektronik : bpsmbsurakarta@yahoo.com, ujimutubalong@gmail.com
Laman : www.bpsmbsurakarta.com

LAPORAN HASIL UJI

Nomor : PJ.0422.00/V/2022

Contoh diserahkan / ~~dikirim~~ oleh pelanggan / ~~PPC~~ *), dengan identitas sebagai berikut :

1. Nama barang : **MINYAK ATSIRI BIJI JINTAN HITAM**
2. Pemilik barang : Mila Octaviani
   Balong Baru RT. 01, RW. 22, Kadipiro
   Banjarsari, Surakarta
3. Deskripsi contoh : -
4. Tanggal terima contoh : 20 April 2022
5. Nomor contoh : PJ.22.0431.00
6. Tanggal pengujian : 20 April – 31 Mei 2022
7. Hasil pengujian :

JENIS UJI	HASIL UJI	CARA UJI
Thymoquinone, % (b/b)	18,82	GCMS

*) Coret yang tidak berlaku

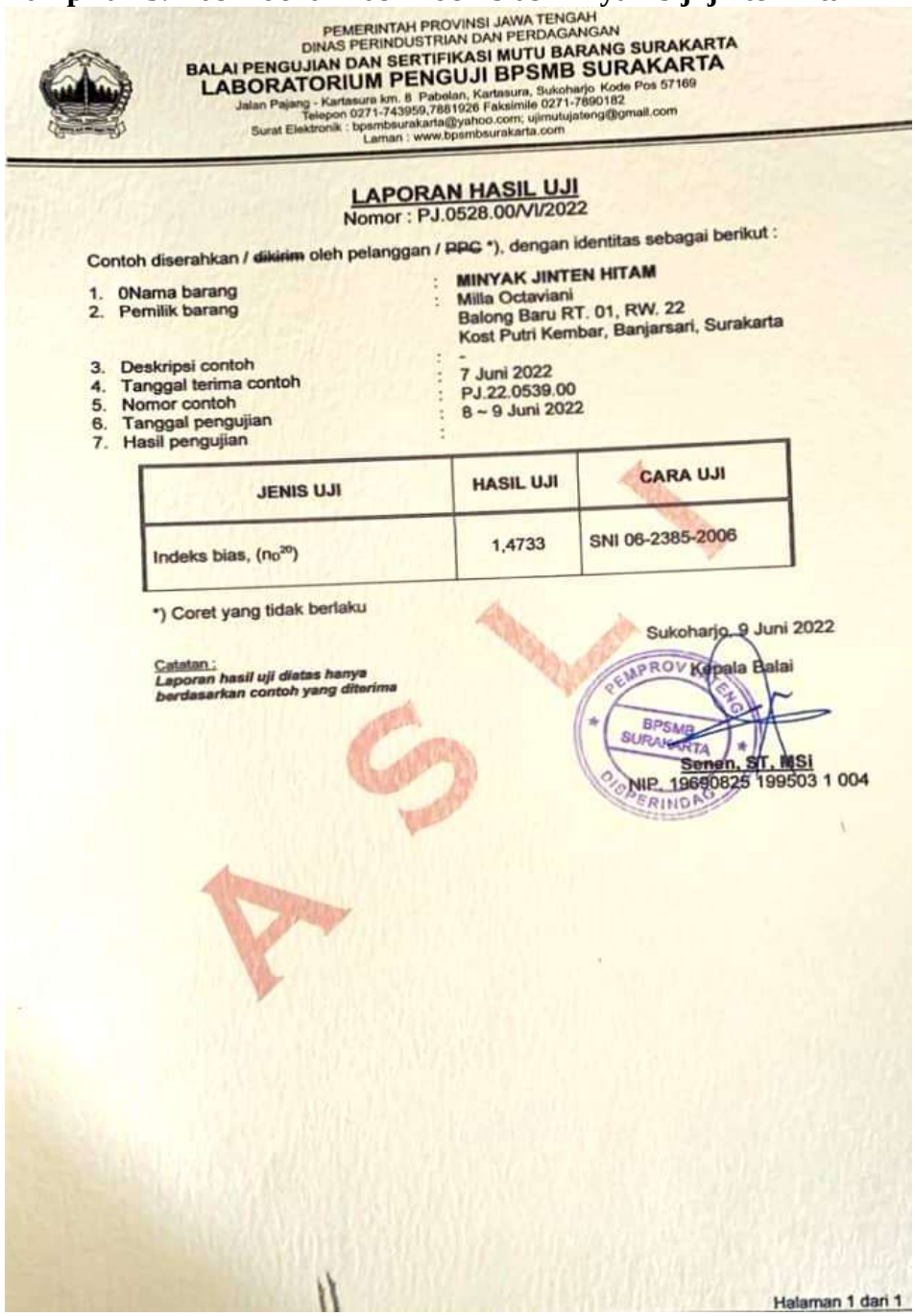
Sukoharjo, 31 Mei 2022

Kepala Balai

Catatan :
Laporan hasil uji diatas hanya berdasarkan contoh yang diterima

Senen, ST, MSi
NIP. 19690825 199503 1 004

Lampiran 3. Hasil identifikasi indek bias minyak biji jinten hitam



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Surat Elektronik : bpsmbsurakarta@yahoo.com; ujimutujateng@gmail.com
Laman : www.bpsmbsurakarta.com

LAPORAN HASIL UJI
Nomor : PJ.0528.00/VI/2022

Contoh diserahkan / ~~dikirim~~ oleh pelanggan / ~~PPC~~ *), dengan identitas sebagai berikut :

1. 0Nama barang : **MINYAK JINTEN HITAM**
2. Pemilik barang : Milla Octaviani
   Balong Baru RT. 01, RW. 22
   Kost Putri Kembar, Banjarsari, Surakarta
3. Deskripsi contoh : -
4. Tanggal terima contoh : 7 Juni 2022
5. Nomor contoh : PJ.22.0539.00
6. Tanggal pengujian : 8 ~ 9 Juni 2022
7. Hasil pengujian :

JENIS UJI	HASIL UJI	CARA UJI
Indeks bias, (n_D^{20})	1,4733	SNI 06-2385-2006

*) Coret yang tidak berlaku

Sukoharjo, 9 Juni 2022
Kepala Balai

Catatan :
Laporan hasil uji diatas hanya berdasarkan contoh yang diterima

Senen, ST, MSi
NIP. 19690825 199503 1 004

ASLI

Halaman 1 dari 1

Lampiran 4. Alat yang digunakan dalam penelitian

 Oven	 Autoclave	 Vortex
 Hot plate	 pH meter	 Alat uji daya sebar
 Timbangan Analitik	 pH meter	 Laminari Air Flow
 Inkubator	 Mikroskop	 *Colony counter*

Lampiran 5. Bahan yang digunakan dalam penelitian

 Minyak atsiri biji jintan matahari	 Paraffin cair	 Span 80
 Tween 80	 Propilen glikol	 Nipagin
 Nipasol	 Aquadest	 Biakan murni *Staphylococcus epidermidis*
 Manitoll salt agar (MSA)	 Nutrient agar (NA)	 Mueller hinton agar (MHA)

 Brain heart infusion (BHI) broth	 Cat gram D	 Cat gram A
 Cat gram B	 Metylen blue	 Reagen sudan III
 Metylen blue	 Dimetyl sulfoxide	

Lampiran 6. Hasil perhitungan bobot jenis minyak biji jinten hitam

Bobot jenis $= \frac{m2-m}{m1-m}$

m = massa piknometer kosong

m_1 = massa piknometer berisi air

m_2 = masa piknometer berisi minyak

Perhitungan

m = 33,123 ; m1 = 82,972

Replikasi 1	Replikasi 2	Replikasi 3
$= \frac{79,001-33,123}{82,972-33,123}$ $= \frac{45,878}{49,849}$ = **0,9203**	$= \frac{78,842-33,123}{82,972-33,123}$ $= \frac{45,719}{49,849}$ = **0,9171**	$= \frac{78,862-33,123}{82,972-33,123}$ $= \frac{45,739}{49,849}$ = **0,9175**

Sampel	**Replikasi**	**Berat Jenis**
Minyak atsiri jintan hitam	1	0,9203
	2	0,9171
	3	0,9175
Rata-rata		0,9183
SD		0,00

Lampiran 7. Hasil identifikasi kelarutan minyak biji jinten hitam

Lampiran 8. Sediaan emulgel minyak atsiri biji jinten hitam.

Lampiran 9. Hasil uji mutu fisik sediaan emulgel minyak atsiri biji jinten hitam

Perhitungan HLB

Span 80	= 0,42/1,5 x 4,3	= 1,2
Tween 80	= 1,08/1,5 x 15	= 10,8
Span 80 + Tween 80	= 1,2 + 10,8	= 12

Kesimpulan : Nilai HLB emulgator dibawah 7 menghasilkan emulsi air dalam minyak (a/m), sedangkan nilai HLB emulgator diatas 7 menghasilkan emulsi minyak dalam air (m/a) (Nonci et al., 2016)

Lampiran 10. Data analisis pH emulgel minyak atsiri biji jinten hitam

Formula	Replikasi	Uji pH		
		pH	Rata-rata	SD
F1	1	5,66	5,66	0,02
	2	5,65		
	3	5,68		
F2	1	5,46	5,48	0,02
	2	5,48		
	3	5,49		
F3	1	5,36	5,35	0,01
	2	5,35		
	3	5,34		
F4	1	6,04	6,05	0,02
	2	6,07		
	3	6,05		

Keterangan :

F1 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 3%

F2 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 3,5%

F3 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 4%

F4 : formula emulgel tanpa minyak atsiri, hpmc 3,5% (Kontrol -)

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	pH	Statistic	df	Sig.	Statistic	df	Sig.
NILAI_pH	FORMULA 1	,292	3	.	,923	3	,463
	FORMULA 2	,385	3	.	,750	3	,000
	FORMULA 3	,175	3	.	1,000	3	1,000
	FORMULA 4	,385	3	.	,750	3	,000

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

NILAI_pH

Levene Statistic	df1	df2	Sig.
1,210	3	8	,367

ANOVA

NILAI_pH

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	,843	3	,281	963,581	,000
Within Groups	,002	8	,000		
Total	,845	11			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: NILAI_pH

Tukey HSD

(I) pH	(J) pH	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
FORMULA 1	FORMULA 2	,18333*	,01394	,000	,1387	,2280
	FORMULA 3	,31333*	,01394	,000	,2687	,3580
	FORMULA 4	-,39000*	,01394	,000	-,4347	-,3453
FORMULA 2	FORMULA 1	-,18333*	,01394	,000	-,2280	-,1387
	FORMULA 3	,13000*	,01394	,000	,0853	,1747
	FORMULA 4	-,57333*	,01394	,000	-,6180	-,5287
FORMULA 3	FORMULA 1	-,31333*	,01394	,000	-,3580	-,2687
	FORMULA 2	-,13000*	,01394	,000	-,1747	-,0853
	FORMULA 4	-,70333*	,01394	,000	-,7480	-,6587
FORMULA 4	FORMULA 1	,39000*	,01394	,000	,3453	,4347
	FORMULA 2	,57333*	,01394	,000	,5287	,6180
	FORMULA 3	,70333*	,01394	,000	,6587	,7480

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

Homogeneous Subsets

NILAI_pH

Tukey HSD[a]

pH	N	Subset for alpha = 0.05 1	2	3	4
FORMULA 3	3	5,3400			
FORMULA 2	3		5,4700		
FORMULA 1	3			5,6533	
FORMULA 4	3				6,0433
Sig.		1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

Lampiran 11. Data analisis daya lekat emulgel minyak atsiri biji jinten hitam

formulasi	replikasi	uji daya lekat (cm)		
		daya lekat	rata-rata	SD
F1	1	1,41	1,45	0,04
	2	1,45		
	3	1,49		
F2	1	1,49	1,52	0,03
	2	1,53		
	3	1,55		
F3	1	1,56	1,59	0,03
	2	1,58		
	3	1,62		
F4	1	1,59	1,63	0,04
	2	1,64		
	3	1,66		

Keterangan :

F1 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 3%

F2 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 3,5%

F3 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 4%

F4 : formula emulgel tanpa minyak atsiri, hpmc 3,5% (Kontrol -)

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	DAYA_LEKAT	Statistic	Df	Sig.	Statistic	Df	Sig.
LAMA LEKAT	FORMULA 1	,175	3	.	1,000	3	1,000
	FORMULA 2	,253	3	.	,964	3	,637
	FORMULA 3	,253	3	.	,964	3	,637
	FORMULA 4	,276	3	.	,942	3	,537

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

LAMA_LEKAT

Levene Statistic	df1	df2	Sig.
,069	3	8	,975

ANOVA

LAMA_LEKAT

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	,055	3	,018	15,466	,001
Within Groups	,010	8	,001		
Total	,065	11			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: LAMA_LEKAT
Tukey HSD

(I) DAYA_LEKAT	(J) DAYA_LEKAT	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
FORMULA 1	FORMULA 2	-,07333	,02819	,117	-,1636	,0169
	FORMULA 3	-,13667*	,02819	,006	-,2269	-,0464
	FORMULA 4	-,18000*	,02819	,001	-,2703	-,0897
FORMULA 2	FORMULA 1	,07333	,02819	,117	-,0169	,1636
	FORMULA 3	-,06333	,02819	,190	-,1536	,0269
	FORMULA 4	-,10667*	,02819	,022	-,1969	-,0164
FORMULA 3	FORMULA 1	,13667*	,02819	,006	,0464	,2269
	FORMULA 2	,06333	,02819	,190	-,0269	,1536
	FORMULA 4	-,04333	,02819	,461	-,1336	,0469
FORMULA 4	FORMULA 1	,18000*	,02819	,001	,0897	,2703
	FORMULA 2	,10667*	,02819	,022	,0164	,1969
	FORMULA 3	,04333	,02819	,461	-,0469	,1336

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

Homogeneous Subsets

LAMA_LEKAT

Tukey HSD[a]

DAYA_LEKAT	N	Subset for alpha = 0.05 1	2	3
FORMULA 1	3	1,4500		
FORMULA 2	3	1,5233	1,5233	
FORMULA 3	3		1,5867	1,5867
FORMULA 4	3			1,6300
Sig.		,117	,190	,461

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Lampiran 12. Data analisis daya sebar emulgel minyak atsiri biji jinten hitam

Beban (mg)	replikasi 1	replikasi 2	replikasi 3	rata-rata	SD	formulasi
50	3	3,11	3,2	3,10	0,10	F1
100	3,14	3,15	3,16	3,15	0,01	
150	3,29	3,3	3,31	3,30	0,01	
250	3,4	3,42	3,42	3,41	0,01	
50	3,03	3,05	3,07	3,05	0,02	F2
100	3,15	3,13	3,17	3,15	0,02	
150	3,23	3,29	3,26	3,26	0,03	
250	3,32	3,34	3,37	3,34	0,03	
50	2,95	3,04	3,01	3,00	0,05	F3
100	3,08	3,1	3,13	3,10	0,03	
150	3,15	3,12	3,18	3,15	0,03	
250	3,23	3,19	3,2	3,21	0,02	
50	3,24	3,29	3,26	3,26	0,03	F4
100	3,34	3,36	3,39	3,36	0,03	
150	3,44	3,47	3,49	3,47	0,03	
250	3,53	3,52	3,57	3,54	0,03	

Keterangan :

F1 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 3%

F2 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 3,5%

F3 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 4%

F4 : formula emulgel tanpa minyak atsiri, hpmc 3,5% (Kontrol -)

Tests of Normality

	DAYA_SEBAR	Kolmogorov-Smirnov[a] Statistic	Df	Sig.	Shapiro-Wilk Statistic	df	Sig.
LUAS_SEBARAN	FORMULA 1	,175	3	.	1,000	3	1,000
	FORMULA 2	,175	3	.	1,000	3	1,000
	FORMULA 3	,219	3	.	,987	3	,780
	FORMULA 4	,219	3	.	,987	3	,780

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

LUAS_SEBARAN

Levene Statistic	df1	df2	Sig.
,682	3	8	,588

ANOVA

LUAS_SEBARAN

	Sum of Squares	Df	Mean Square	F	Sig.

Between Groups	,122	3	,041	92,252	,000
Within Groups	,004	8	,000		
Total	,126	11			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: LUAS_SEBARAN

Tukey HSD

(I) DAYA SEBAR	(J) DAYA_ SEBAR	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
FORMULA 1	FORMULA 2	,00000	,01716	1,000	-,0550	,0550
	FORMULA 3	,04667	,01716	,099	-,0083	,1016
	FORMULA 4	-,21333*	,01716	,000	-,2683	-,1584
FORMULA 2	FORMULA 1	,00000	,01716	1,000	-,0550	,0550
	FORMULA 3	,04667	,01716	,099	-,0083	,1016
	FORMULA 4	-,21333*	,01716	,000	-,2683	-,1584
FORMULA 3	FORMULA 1	-,04667	,01716	,099	-,1016	,0083
	FORMULA 2	-,04667	,01716	,099	-,1016	,0083
	FORMULA 4	-,26000*	,01716	,000	-,3150	-,2050
FORMULA 4	FORMULA 1	,21333*	,01716	,000	,1584	,2683
	FORMULA 2	,21333*	,01716	,000	,1584	,2683
	FORMULA 3	,26000*	,01716	,000	,2050	,3150

Homogeneous Subsets

LUAS_SEBARAN

Tukey HSD[a]

DAYA_SEBAR	N	Subset for alpha = 0.05 1	Subset for alpha = 0.05 2
FORMULA 3	3	3,1033	
FORMULA 1	3	3,1500	
FORMULA 2	3	3,1500	
FORMULA 4	3		3,3633
Sig.		,099	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Lampiran 13. Data analisis viskositas emulgel minyak atsiri biji jinten hitam

formulasi	replikasi	viskositas (dPas)		
		Viskositas	rata-rata	SD
F1	1	114	110	8,72
	2	100		
	3	116		
F2	1	134	140	6,56
	2	139		
	3	147		
F3	1	163	170	7,55
	2	178		
	3	169		
F4	1	124	130	6,56
	2	129		
	3	137		

Keterangan :

F1 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 3%

F2 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 3,5%

F3 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 4%

F4 : formula emulgel tanpa minyak atsiri, hpmc 3,5% (Kontrol -)

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	VISKOSITAS	Statistic	Df	Sig.	Statistic	df	Sig.
NILAI_VISKOSITAS	FORMULA 1	,343	3	.	,842	3	,220
	FORMULA 2	,227	3	.	,983	3	,747
	FORMULA 3	,219	3	.	,987	3	,780
	FORMULA 4	,227	3	.	,983	3	,747

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

NILAI_VISKOSITAS

Levene Statistic	df1	df2	Sig.
,241	3	8	,866

ANOVA

NILAI_VISKOSITAS

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	5625,000	3	1875,000	34,247	,000
Within Groups	438,000	8	54,750		
Total	6063,000	11			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: NILAI_VISKOSITAS

Tukey HSD

(I) VISKOSITAS	(J) VISKOSITAS	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
FORMULA 1	FORMULA 2	-30,00000*	6,04152	,005	-49,3471	-10,6529
	FORMULA 3	-60,00000*	6,04152	,000	-79,3471	-40,6529
	FORMULA 4	-20,00000*	6,04152	,043	-39,3471	-,6529
FORMULA 2	FORMULA 1	30,00000*	6,04152	,005	10,6529	49,3471
	FORMULA 3	-30,00000*	6,04152	,005	-49,3471	-10,6529
	FORMULA 4	10,00000	6,04152	,404	-9,3471	29,3471
FORMULA 3	FORMULA 1	60,00000*	6,04152	,000	40,6529	79,3471
	FORMULA 2	30,00000*	6,04152	,005	10,6529	49,3471
	FORMULA 4	40,00000*	6,04152	,001	20,6529	59,3471
FORMULA 4	FORMULA 1	20,00000*	6,04152	,043	,6529	39,3471
	FORMULA 2	-10,00000	6,04152	,404	-29,3471	9,3471
	FORMULA 3	-40,00000*	6,04152	,001	-59,3471	-20,6529

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

Homogeneous Subsets

NILAI_VISKOSITAS

Tukey HSD[a]

VISKOSITAS	N	Subset for alpha = 0.05 1	2	3
FORMULA 1	3	110,0000		
FORMULA 4	3		130,0000	
FORMULA 2	3		140,0000	
FORMULA 3	3			170,0000
Sig.		1,000	,404	1,000

Lampiran 14. Data analisis stabilitas viskositas emulgel minyak atsiri biji jinten hitam

uji viskositas sebelum cycling test

Formulasi	replikasi	viskositas (dPas)		
		Viskositas	rata-rata	SD
F1	1	114	110	8,72
	2	100		
	3	116		
F2	1	134	140	6,56
	2	139		
	3	147		
F3	1	163	170	7,55
	2	178		
	3	169		
F4	1	124	130	6,56
	2	129		
	3	137		

uji viskositas sesudah cycling test

Formula	Replikasi	Uji viskositas		
		pH	Rata-rata	SD
F1	1	97	100	3,00
	2	100		
	3	103		
F2	1	135	130	5,00
	2	125		
	3	130		
F3	1	155	160	4,36
	2	162		
	3	163		
F4	1	128	120	8,54
	2	111		
	3	121		

Keterangan :
F1 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 3%
F2 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 3,5%
F3 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 4%
F4 : formula emulgel tanpa minyak atsiri, hpmc 3,5% (Kontrol -)

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
NILAI_VIKSO_SEBELUM	,241	3	8	,866
NILAI_VISKO_SESUDAH	1,034	3	8	,428

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	NILAI_VIKSO_SEBELUM	137,5000	12	23,47726	6,77730
	NILAI_VISKO_SESUDAH	127,5000	12	23,11434	6,67254

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	NILAI_VIKSO_SEBELUM - NILAI_VISKO_SESUDAH	10,00000	7,95442	2,29624	4,94601	15,05399	4,355	11	,001

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	NILAI_VIKSO_SEBELUM & NILAI_VISKO_SESUDAH	12	,942	,000

	VISKOSITAS	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
NILAI_VIKSO_SEBELUM	FORMULA 1	,343	3	.	,842	3	,220
	FORMULA 2	,227	3	.	,983	3	,747
	FORMULA 3	,219	3	.	,987	3	,780
	FORMULA 4	,227	3	.	,983	3	,747
NILAI_VISKO_SESUDAH	FORMULA 1	,175	3	.	1,000	3	1,000
	FORMULA 2	,175	3	.	1,000	3	1,000
	FORMULA 3	,343	3	.	,842	3	,220
	FORMULA 4	,213	3	.	,990	3	,806

a. Lilliefors Significance Correction

Lampiran 15. Data analisis stabilitas pH emulgel minyak atsiri biji jinten hitam

uji pH sebelum cycling test

Formula	Replikasi	Uji pH		
		pH	Rata-rata	SD
F1	1	5,66	5,66	0,02
	2	5,65		
	3	5,68		
F2	1	5,46	5,48	0,02
	2	5,48		
	3	5,49		
F3	1	5,36	5,35	0,01
	2	5,35		
	3	5,34		
F4	1	6,04	6,05	0,02
	2	6,07		
	3	6,05		

uji pH sesudah cycling test

Formula	Replikasi	Uji pH		
		pH	Rata-rata	SD
F1	1	5,66	5,65	0,02
	2	5,63		
	3	5,67		
F2	1	5,46	5,47	0,02
	2	5,46		
	3	5,49		
F3	1	5,36	5,34	0,02
	2	5,32		
	3	5,34		
F4	1	6,04	6,04	0,01
	2	6,04		
	3	6,05		

Keterangan :

F1 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 3%

F2 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 3,5%

F3 : formula emulgel dengan minyak atsiri biji jinten hitam 7%, hpmc 4%

F4 : formula emulgel tanpa minyak atsiri, hpmc 3,5% (Kontrol -)

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	pH	Statistic	Df	Sig.	Statistic	df	Sig.
NILAI_pH SEBELUM	FORMULA 1	,253	3	.	,964	3	,637
	FORMULA 2	,253	3	.	,964	3	,637
	FORMULA 3	,175	3	.	1,000	3	1,000
	FORMULA 4	,253	3	.	,964	3	,637
NILAI_pH SESUDAH	FORMULA 1	,292	3	.	,923	3	,463
	FORMULA 2	,385	3	.	,750	3	,000
	FORMULA 3	,175	3	.	1,000	3	1,000
	FORMULA 4	,385	3	.	,750	3	,000

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
NILAI_pH_SEBELUM	,333	3	8	,802
NILAI_pH_SESUDAH	1,210	3	8	,367

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	NILAI_pH_SEBELUM	5,6358	12	,27763	,08015
	NILAI_pH_SESUDAH	5,6267	12	,27724	,08003

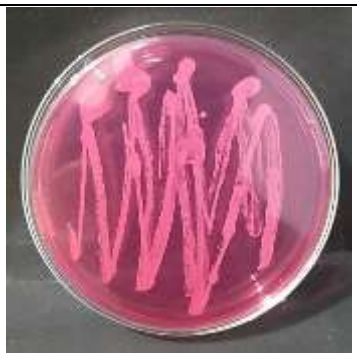
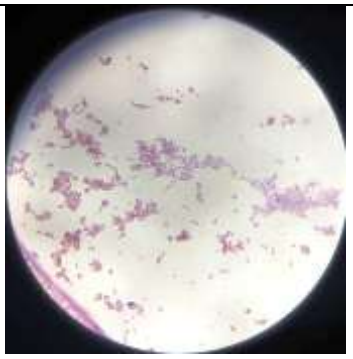
Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	NILAI_pH_SEBELUM & NILAI_pH_SESUDAH	12	,999	,000

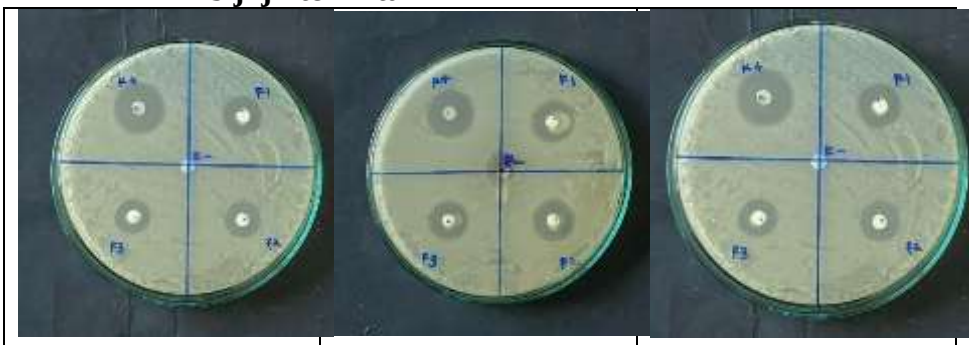
Paired Samples Test

		Paired Differences					t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	NILAI_pH SEBELUM NILAI_pH SESUDAH	,00917	,01240	,00358	,00129	,01705	2,561	11	,026

Lampiran 16. Hasil identifikasi bakteri S*taphylococcus epidermidis*

	
Hasil identifikasi berdasarkan koloni *Sthapylococcus epidermidis*	Hasil identifikasi pewarnaan gram *Sthapylococcus epidermidis*
	
Hasil uji biokimia katalase *Sthapylococcus epidermidis*	Hasil uji biokimia koagulase *Sthapylococcus epidermidis*

Lampiran 17. Hasil uji aktivitas antibakteri emulgel minyak atsiri biji jinten hitam



Replikasi 1	Replikasi 2	Replikasi 3

Lampiran 18. Data analisis aktivitas antibakteri emulgel minyak atsiri biji jinten hitam

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Formula	Statistic	Df	Sig.	Statistic	df	Sig.
Uji_Antibakteri	Formula 1	.175	3	.	1.000	3	1.000
	Formula 2	.337	3	.	.855	3	.253
	Formula 3	.280	3	.	.938	3	.518
	Kontrol Positif	.175	3	.	1.000	3	1.000
	Kontrol Negatif	.198	3	.	.995	3	.868

a. Lilliefors Significance Correction

Oneway

Descriptives

Uji_Antibakteri

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
Formula 1	3	19.2500	.32000	.18475	18.4551	20.0449	18.93	19.57
Formula 2	3	17.3467	.30288	.17487	16.5943	18.0991	17.00	17.56
Formula 3	3	15.8000	.24269	.14012	15.1971	16.4029	15.60	16.07
Kontrol Positif	3	28.7300	.02000	.01155	28.6803	28.7797	28.71	28.75
Kontrol Negatif	3	.6100	.37590	.21703	-.3238	1.5438	.25	1.00
Total	15	16.3473	9.38442	2.42305	11.1504	21.5443	.25	28.75

Test of Homogeneity of Variances

Uji_Antibakteri

Levene Statistic	df1	df2	Sig.
1.479	4	10	.280

ANOVA

Uji_Antibakteri

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1232.153	4	308.038	3901.854	.000
Within Groups	.789	10	.079		
Total	1232.943	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Uji_Antibakteri

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Formula 1	Formula 2	1.90333*	.22941	.000	1.1483	2.6584
	Formula 3	3.45000*	.22941	.000	2.6950	4.2050
	Kontrol Positif	-9.48000*	.22941	.000	-10.2350	-8.7250
	Kontrol Negatif	18.64000*	.22941	.000	17.8850	19.3950
Formula 2	Formula 1	-1.90333*	.22941	.000	-2.6584	-1.1483
	Formula 3	1.54667*	.22941	.000	.7916	2.3017
	Kontrol Positif	-11.38333*	.22941	.000	-12.1384	-10.6283
	Kontrol Negatif	16.73667*	.22941	.000	15.9816	17.4917
Formula 3	Formula 1	-3.45000*	.22941	.000	-4.2050	-2.6950
	Formula 2	-1.54667*	.22941	.000	-2.3017	-.7916
	Kontrol Positif	-12.93000*	.22941	.000	-13.6850	-12.1750
	Kontrol Negatif	15.19000*	.22941	.000	14.4350	15.9450
Kontrol Positif	Formula 1	9.48000*	.22941	.000	8.7250	10.2350
	Formula 2	11.38333*	.22941	.000	10.6283	12.1384
	Formula 3	12.93000*	.22941	.000	12.1750	13.6850
	Kontrol Negatif	28.12000*	.22941	.000	27.3650	28.8750
Kontrol Negatif	Formula 1	-18.64000*	.22941	.000	-19.3950	-17.8850
	Formula 2	-16.73667*	.22941	.000	-17.4917	-15.9816
	Formula 3	-15.19000*	.22941	.000	-15.9450	-14.4350
	Kontrol Positif	-28.12000*	.22941	.000	-28.8750	-27.3650

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

Homogeneous Subsets

Uji_Antibakteri

Tukey HSD[a]

Formula	N	Subset for alpha = 0.05				
		1	2	3	4	5
Kontrol Negatif	3	.6100				
Formula 3	3		15.8000			
Formula 2	3			17.3467		
Formula 1	3				19.2500	
Kontrol Positif	3					28.7300
Sig.		1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 19. Hasil orientasi uji aktivitas antibakteri minyak atsiri biji jinten hitam