BAB V

KESIMPULAN DAN SARAN

A. Kesimpulan

Berdasarkan penelitian yang telah dilakukan dapat disimpulkan sebagai berikut :

1. Minyak zaitun (*Olive oil*) dapat dibuat sediaan emulgel dengan mutu fisik berdasarkan pengujian organoleptis, homogenitas, daya sebar, daya lekat, dan viskositas. Namun, dalam pengujian pH sediaan tidak memenuhi persyaratan pH pada kulit.

2. Perbedaan Na CMC sebagai *gelling agent* dapat mempengaruhi mutu fisik serta stabilitas emulgel minyak zaitun yang dihasilkan.

3. Didapatkan emulgel dengan mutu fisik yang baik pada formulasi 1 berdasarkan pengujian organoleptis, homogenitas, daya sebar, daya lekat, dan viskositas. Namun, dalam pengujian pH sediaan tidak memenuhi persyaratan pH pada kulit.

B. Saran

Perlu dilakukan penelitian lebih lanjut tentang pembuatan emulgel minyak zaitun (*Olive oil*) dengan variasi *gelling agent* yang berbeda untuk mendapatkan sediaan emulgel mutu fisik yang baik.

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Lampiran 1. *Certificate Of Analysis* **Minyak zaitun** *(Olive oil)*

TEXTRON

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e-mail: textron@plimon.com · www.plimon.com

POMACE OLIVE OIL COSMETIC GRADE

CUSTOMER	NARDEV CHEMIE PTE. LTD.	**MANUFACT. DATE**	02-2018
BATCH Nº	0702E041771	**ANALYSIS DATE**	02-2018
DELIVERY	5750 KG	**BEST BEFORE**	02-2020

SPECIFICATION	00823504	**CERTIFICATE Nº** 69041	**EDITION DATE**	05/03/18

PARAMETERS	SPECIFICATIONS	RESULTS
Appearance	Clear oily liquid, yellow pale or greenish yellow color.	Pass test
Acidity index	< 2	0.2
Peroxide value (meq/kg at time of pack. 20ºC) (PE 2.5.5)	< 10 meq O2/Kg	0.8
Specific gravity at 25ºC	0.910 - 0.916	0.913
CHROMATOGRAM ACIDS:		
Saturated fatty acids as chain length		
less than C16	Max 0.1 %	<0.1
Palmitic	7 - 15 %	10.0
Palmitoleic	Max 3.5 %	0.6
Stearic	0.5 - 5.0 %	3.2
Oleic	56.0 - 85.0 %	64.2
Linoleic	3.5 - 20 %	19.6
Linolenic	Max 1.5 %	1.1
Arachidic	Max 0.7 %	0.4
Gadoleic	Max 0.5 %	0.3
Behenic	Max 0.8 %	0.4
Lignoceric	Max 0.2 %	<0.2
Iodine Value	77 - 87	86
Saponification Value	190 - 200	190
Unsaponificable matter	max. 2 %	<2.0

Observations

PACKING : 200 KGS. (420 LB.) STELL DRUMS OR 23 KGS PAILS/TANKCAR.
STORAGE : KEEP FULL AND WELL CLOSED IN A DRY PLACE AND AWAY FROM LIGHT.
WE CERTIFY THAT OUR PRODUCTS HAVE NEVER BEEN TESTED USING ANIMALS

THIS OIL HAS BEEN SPECIALLY FORMULATED FOR COSMETIC APPLICATIONS. OFFERING ENHANCED STABILITY..

Conclusion

COMPLIES WITH SPECIFICATIONS

TEXTRON PLIMON, S.L.U.
C.I.F. B-59932624

TEXTRON PLIMON, S.L.U.
Quality Control Dept.

SGS

Lampiran 2. Perhitungan Formula Emulgel Minyak Zaitun

1. Formula I

   - Minyak Zaitun $\frac{10}{100} \, x \, 100g = 10g$

   - Parafin Liq $\frac{10}{100} \, x \, 100g = 10g$

   - Natrium Lauril Sulfat $\frac{0,5}{100} \, x \, 100g = 0,5g$

   - Setil Alkohol $\frac{4,5}{100} \, x \, 100g = 4,5 \, g$

   - Gliserin $\frac{10}{100} \, x \, 100g = 10g$

   - Propilenglikol $\frac{5}{100} \, x \, 100g = 5 \, g$

   - Na CMC $\frac{1}{100} \, x \, 100g = 1 \, g$

   - Aquades ad 100 = 100g − (10+10+0,5+4,5+10+5+1) = 100g-41= 59 g

2. Formula II

   - Minyak Zaitun $\frac{10}{100} \, x \, 100g = 10g$

   - Parafin Liq $\frac{10}{100} \, x \, 100g = 10g$

   - Natrium Lauril Sulfat $\frac{0,5}{100} \, x \, 100g = 0,5g$

   - Setil Alkohol $\frac{4,5}{100} \, x \, 100g = 4,5 \, g$

   - Gliserin $\frac{10}{100} \, x \, 100g = 10g$

   - Propilenglikol $\frac{5}{100} \, x \, 100g = 5 \, g$

   - Na CMC $\frac{1,5}{100} \, x \, 100g = 1,5 \, g$

   - Aquades ad 100 = 100g − (10+10+0,5+4,5+10+5+1,5) = 100g - 41,5 = 58,5 g

3. Formula III

- Minyak Zaitun $\frac{10}{100} \, x \, 100g = 10g$

- Parafin Liq $\frac{10}{100} \, x \, 100g = 10g$

- Natrium Lauril Sulfat $\frac{0,5}{100} \, x \, 100g = 0,5g$

- Setil Alkohol $\frac{4,5}{100} \, x \, 100g = 4,5 \, g$

- Gliserin $\frac{10}{100} \, x \, 100g = 10g$

- Propilenglikol $\frac{5}{100} \, x \, 100g = 5 \, g$

- Na CMC $\frac{2}{100} \, x \, 100g = 2 \, g$

- Aquades ad 100 = 100g – (10+10+0,5+4,5+10+5+2) = 100g -42 = 58 g

Lampiran 3. Pengujian Emulgel Minyak Zaitun

1. Uji Homogenitas
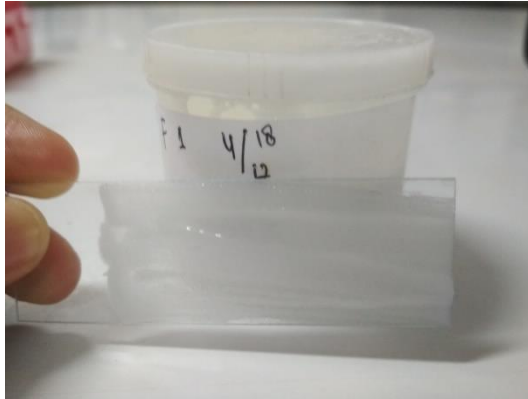
F I Hari Pertama
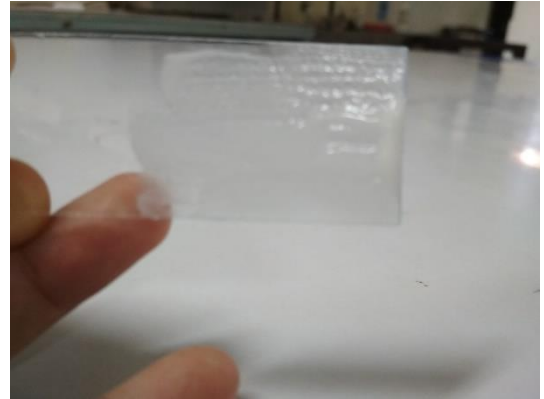
F I Hari Ke-30
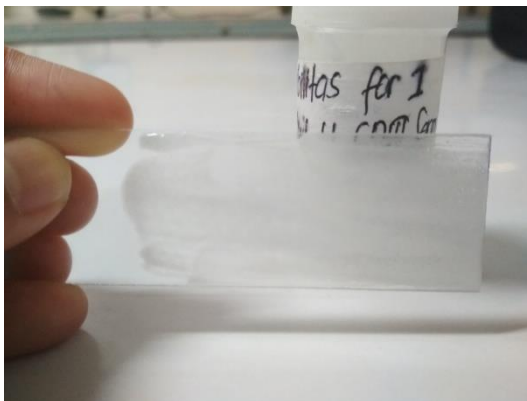
F I Sediaan Stabilitas
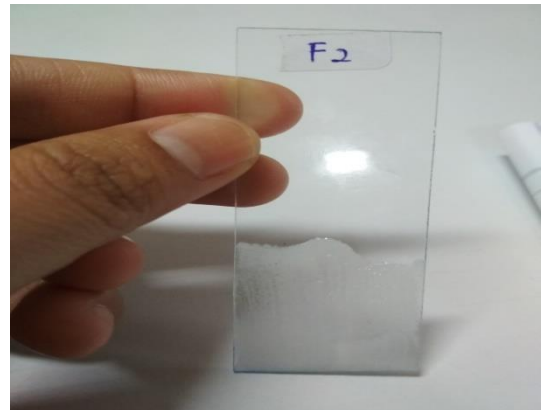
F II Hari Pertama

F II Hari Ke-30

F II Sediaan Stabilitas

2. Uji pH
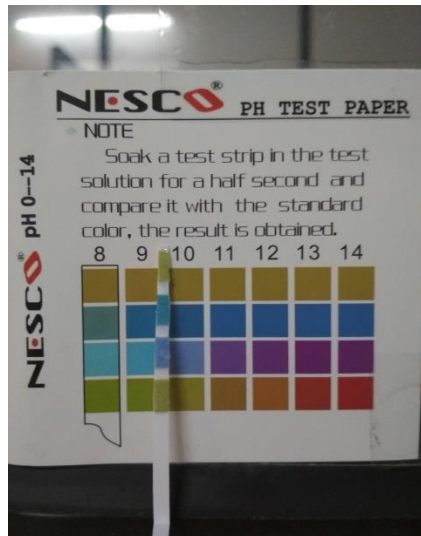
F I Hari Ke-30

F I Sediaan Stabilitas
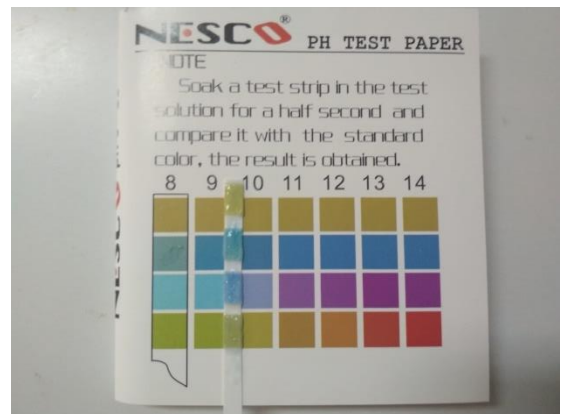
F II Hari Pertama

F II Hari Pertama

3. Uji Viskositas

F I Hari Pertama

F II Hari Pertama

F I Hari Ke-30

F III Sediaan Stabilitas

4. Uji Daya Lekat

F III Sediaan Stabilitas
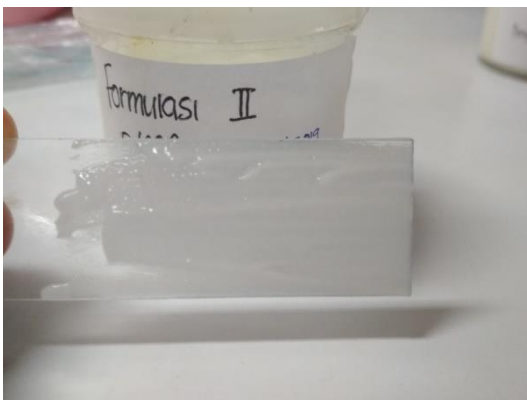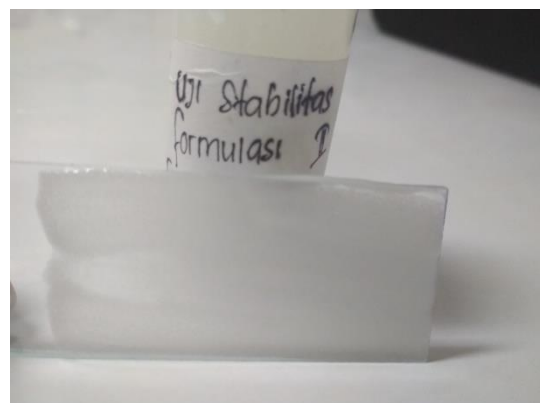

F III Hari Pertama

F I Hari Ke-30

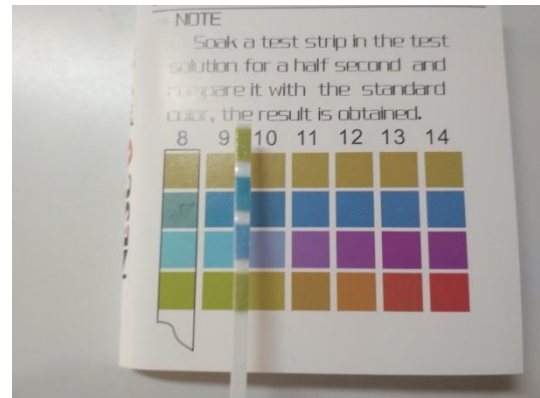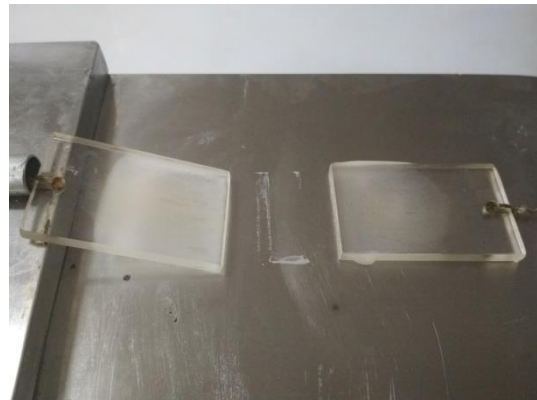F II Sediaan Stabilitas

5. Uji Daya Sebar

F II Sediaan Stabilitas

F II Sediaan Stabilitas

F II Sediaan Stabilitas

F II Sediaan Stabilitas

Lampiran 4. Hasil Emulgel Minyak Zaitun

F III Sediaan Stabilitas

F I Sediaan Stabilitas
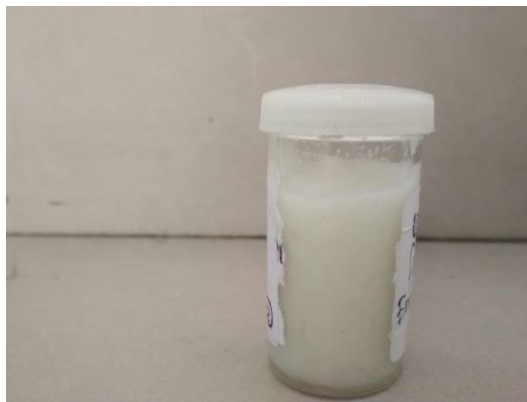
F II Sediaan Stabilitas

Formulasi I, II, III

Lampiran 5. Data Hasil Pengujian Daya Sebar Emulgel Minyak Zaitun

Pengujian	Beban	Formula I			Rata-Rata ± SD
		Replikasi 1	Replikasi 2	Replikasi 3	
1 Hari	0	4,2	4,37	4,35	4,30 ± 0,09
	50	4,92	5,07	5,07	5,02 ± 0,08
	150	5,42	5,8	5,72	5,64 ± 0,20
	200	5,95	6,2	6,1	6,08 ± 0,12
30 Hari	0	4,17	4,17	4,15	4,16 ± 0,01
	50	4,3	4,9	4,97	4,72 ± 0,36
	150	5,05	5,45	5,55	5,35 ± 0,26
	200	5,57	5,9	6	5,82 ± 0,22
	0	5,02	4,77	4,6	4,79 ± 0,21
Stabilitas	50	5,9	5,4	5,17	5,49 ± 0,37
	150	6,47	6,02	5,65	6,04 ± 0,41
	200	5,21	6,35	6,07	5,87 ± 0,59

Pengujian	Beban	Formula II			Rata-Rata ± SD
		Replikasi 1	Replikasi 2	Replikasi 3	
1 Hari	0	3,87	3,87	3,77	3,83 ± 0,05
	50	4,42	4,42	4,27	4,37 ± 0,08
	150	4,85	5,07	4,92	4,94 ± 0,11
	200	5,22	5,45	5,25	5,30 ± 0,12
30 Hari	0	3,82	3,72	3,5	3,68 ± 0,16
	50	4,22	4,2	4,1	4,17 ± 0,06
	150	4,87	4,67	4,6	4,71 ± 0,14
	200	5,02	5,05	4,92	4,99 ± 0,06
Stabilitas	0	3,9	3,87	3,8	4,85 ± 0,05
	50	4,45	4,45	4,27	4,39 ± 0,10
	150	4,87	4,95	4,22	4,68 ± 0,40
	200	5,1	5,22	5,22	5,18 ± 0,06

Pengujian	Beban	Formula III			Rata-Rata ± SD
		Replikasi 1	Replikasi 2	Replikasi 3	
1 Hari	0	3,1	3,4	3,05	3,18 ± 0,18
	50	3,57	3,85	3,52	3,64 ± 0,17
	150	4,1	4,42	4,07	4,19 ± 0,19
	200	4,45	4,87	4,47	4,59 ± 0,23
30 Hari	0	3,25	3,27	3,25	3,25 ± 0,01
	50	3,7	3,77	3,85	3,77 ± 0,07
	150	4,17	4,17	4,32	4,22 ± 0,08
	200	4,47	4,52	4,55	4,51 ± 0,04
Stabilitas	0	3,35	3,3	3,12	2,19 ± 1,79
	50	3,82	3,57	3,5	3,63 ± 0,16
	150	4,22	4,1	4,02	4,11 ± 0,10
	200	4,57	4,45	4,32	4,44 ± 0,12

Lampiran 6. Data Hasil Pengujian Daya Lekat

Formula	Pengujian	Replikasi (Detik)			Rata-rata (detik)
		1	**2**	**3**	
I	1 Hari	01,6	01,4	01,2	1,4
	30 Hari	1,46	1,45	1,38	1,43
	Stabiitas	00,8	00,6	00,5	0,63
II	1 Hari	01,45	01,48	01,45	1,46
	30 Hari	01,68	01,66	01,64	1,66
	Stabiitas	01,3	01,3	01,2	1,26
III	1 Hari	2,30	2,30	2,30	2,30
	30 Hari	02,30	02,29	02,22	2,27
	Stabiitas	2,4	2,3	2,4	2,36

Lampiran 7. hasill uji viskositas

Formula	Pengujian	Repliiksi			Rata-rata
		1	2	3	
I	1 Hari	100	100	100	100
	30 Hari	150	150	150	150
	Stabiitas	90	100	80	90
II	1 Hari	150	160	140	150
	30 Hari	200	200	200	200
	Stabiitas	170	170	170	170
III	1 Hari	250	240	260	250
	30 Hari	220	230	240	230
	Stabiitas	250	250	250	250

Lampiran 8. **Hasil uji statistik mutu fisik viskositas emulgel minyak zaitun menggunakan *One Way* ANOVA dan *Post Hoc***

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Pengujian Visikositas	6	180,00	56,569	100	250

One-Sample Kolmogorov-Smirnov Test

		Pengujian Visikositas
N		6
Normal Parameters[a,b]	Mean	180,00
	Std. Deviation	56,569
Most Extreme Differences	Absolute	,202
	Positive	,202
	Negative	-,145
Kolmogorov-Smirnov Z		,495
Asymp. Sig. (2-tailed)		,967

a. Test distribution is Normal.
b. Calculated from data.

Oneway

Test of Homogeneity of Variances

Pengujian Visikositas

Levene Statistic	df1	df2	Sig.
2262957451117843,000	2	3	,000

ANOVA

Pengujian Visikositas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13300,000	2	6650,000	7,389	,069
Within Groups	2700,000	3	900,000		
Total	16000,000	5			

Multiple Comparisons

Dependent Variable: Pengujian Viskositas

Tukey HSD

(I) Formulasi Emulgel	(J) Formulasi Emulgel	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formulasi I	Formulasi I	-50,000	30,000	,349	-175,36	75,36
	Formulasi III	-115,000	30,000	,062	-240,36	10,36
Formulasi I	Formulasi I	50,000	30,000	,349	-75,36	175,36
	Formulasi III	-65,000	30,000	,223	-190,36	60,36
Formulasi III	Formulasi I	115,000	30,000	,062	-10,36	240,36
	Formulasi I	65,000	30,000	,223	-60,36	190,36

Homogeneous Subsets

Pengujian Viskositas

Tukey HSD[a]

Formulasi Emulgel	N	Subset for alpha = 0.05
		1
Formulasi I	2	125,00
Formulasi I	2	175,00
Formulasi III	2	240,00
Sig.		,062

 Means for groups in homogeneous subsets are displayed.

 a. Uses Harmonic Mean Sample Size = 2,000.

Lampiran 9. Hasil uji statistik mutu fisik daya lekat emulgel minyak zaitun menggunakan *One Way* ANOVA dan *Post Hoc*

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Pengujian Daya Lekat	6	1,7533	,42188	1,40	2,30

One-Sample Kolmogorov-Smirnov Test

		Pengujian Daya Lekat
N		6
Normal Parameters[a,b]	Mean	1,7533
	Std. Deviation	,42188
Most Extreme Differences	Absolute	,257
	Positive	,257
	Negative	-,223
Kolmogorov-Smirnov Z		,628
Asymp. Sig. (2-tailed)		,825

a. Test distribution is Normal.
b. Calculated from data.

Oneway

Test of Homogeneity of Variances

Pengujian Daya Lekat

Levene Statistic	df1	df2	Sig.
.	2	.	.

ANOVA

Pengujian Daya Lekat

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,869	2	,435	62,371	,004
Within Groups	,021	3	,007		
Total	,890	5			

Multiple Comparisons

Dependent Variable: Pengujian Daya Lekat

Tukey HSD

(I) Formulasi Emulgel	(J) Formulasi Emulgel	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formulasi I	Formulasi II	-,14500	,08347	,328	-,4938	,2038
	Formulasi III	-,87000[*]	,08347	,004	-1,2188	-,5212
Formulasi II	Formulasi I	,14500	,08347	,328	-,2038	,4938
	Formulasi III	-,72500[*]	,08347	,007	-1,0738	-,3762
Formulasi III	Formulasi I	,87000[*]	,08347	,004	,5212	1,2188
	Formulasi II	,72500[*]	,08347	,007	,3762	1,0738

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

Pengujian Daya Lekat

Tukey HSD[a]

Formulasi Emulgel	N	Subset for alpha = 0.05	
		1	2
Formulasi I	2	1,4150	
Formulasi II	2	1,5600	
Formulasi III	2		2,2850
Sig.		,328	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Lampiran 10. Hasil uji statistik mutu fisik daya sebar hari pertama emulgel minyak zaitun menggunakan *One Way* ANOVA dan *Post Hoc*

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Pengujian Daya Sebar	12	4,4267	,88841	3,18	6,08

One-Sample Kolmogorov-Smirnov Test

		Pengujian Daya Sebar
N		12
Normal Parameters[a,b]	Mean	4,4267
	Std. Deviation	,88841
Most Extreme Differences	Absolute	,109
	Positive	,109
	Negative	-,081
Kolmogorov-Smirnov Z		,377
Asymp. Sig. (2-tailed)		,999

a. Test distribution is Normal.
b. Calculated from data.

Oneway

Test of Homogeneity of Variances

Pengujian Daya Sebar

Levene Statistic	df1	df2	Sig.
,133	2	9	,877

ANOVA

Pengujian Daya Sebar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4,259	2	2,130	4,333	,048
Within Groups	4,423	9	,491		
Total	8,682	11			

Multiple Comparisons

Dependent Variable: Pengujian Daya Sebar

Tukey HSD

(I) Formulasi Emulgel	(J) Formulasi Emulgel	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formulasi I	Formulasi II	1,14250	,49570	,106	-,2415	2,5265
	Formulasi I	1,35750	,49570	,054	-,0265	2,7415
Formulasi II	Formulasi I	-1,14250	,49570	,106	-2,5265	,2415
	Formulasi I	,21500	,49570	,903	-1,1690	1,5990
Formulasi I	Formulasi I	-1,35750	,49570	,054	-2,7415	,0265
	Formulasi II	-,21500	,49570	,903	-1,5990	1,1690

Pengujian Daya Sebar

Tukey HSD[a]

Formulasi Emulgel	N	Subset for alpha = 0.05
		1
Formulasi I	4	3,9025
Formulasi II	4	4,1175
Formulasi I	4	5,2600
Sig.		,054

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4,000.

Lampiran 11. Hasil uji statistik mutu fisik daya sebar hari ke-30 emulgel minyak zaitun menggunakan *One Way* ANOVA dan *Post Hoc*

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
PengujianDaya Sebar30hari	12	4,5292	,70053	3,25	5,82

One-Sample Kolmogorov-Smirnov Test

		PengujianDayaSebar30hari
N		12
Normal Parameters[a,b]	Mean	4,5292
	Std. Deviation	,70053
Most Extreme Differences	Absolute	,132
	Positive	,116
	Negative	-,132
Kolmogorov-Smirnov Z		,459
Asymp. Sig. (2-tailed)		,984

a. Test distribution is Normal.
b. Calculated from data.

Oneway

Test of Homogeneity of Variances

PengujianDayaSebar30hari

Levene Statistic	df1	df2	Sig.
,158	2	9	,856

ANOVA

PengujianDayaSebar30hari

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,482	2	,741	1,702	,236
Within Groups	3,916	9	,435		
Total	5,398	11			

Multiple Comparisons

Dependent Variable: PengujianDayaSebar30hari

Tukey HSD

(I) FormasiEmulgel	(J) FormasiEmulgel	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formulasi I	Formulasi II	,62500	,46645	,410	-,6773	1,9273
	Formulasi III	,82500	,46645	,234	-,4773	2,1273
Formulasi II	Formulasi I	-,62500	,46645	,410	-1,9273	,6773
	Formulasi III	,20000	,46645	,905	-1,1023	1,5023
Formulasi III	Formulasi I	-,82500	,46645	,234	-2,1273	,4773
	Formulasi II	-,20000	,46645	,905	-1,5023	1,1023

PengujianDayaSebar30hari

Tukey HSD[a]

FormasiEmulgel	N	Subset for alpha = 0.05
		1
Formulasi III	4	4,1875
Formulasi II	4	4,3875
Formulasi I	4	5,0125
Sig.		,234

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4,000.

Lampiran 12. Hasil uji statistik stabilitas viskositas emulgel minyak zaitun menggunakan *One Way* ANOVA dan *Post Hoc*

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
ViskositasStabilitas	6	168,33	69,976	90	250

One-Sample Kolmogorov-Smirnov Test

		ViskositasStabilitas
N		6
Normal Parameters[a,b]	Mean	168,33
	Std. Deviation	69,976
Most Extreme Differences	Absolute	,212
	Positive	,169
	Negative	-,212
Kolmogorov-Smirnov Z		,519
Asymp. Sig. (2-tailed)		,951

a. Test distribution is Normal.

b. Calculated from data.

Oneway

Test of Homogeneity of Variances

ViskositasStabilitas

Levene Statistic	df1	df2	Sig.
8319137275881 617,000	2	3	,000

ANOVA

ViskositasStabilitas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	24233,333	2	12116,667	145,400	,001
Within Groups	250,000	3	83,333		
Total	24483,333	5			

Multiple Comparisons

Dependent Variable: ViskositasStabilitas

Tukey HSD

(I) Formulasi Emulgel	(J) Formulasi Emulgel	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formulasi I	Formulasi I	-65,000[*]	9,129	,012	-103,15	-26,85
	Formulasi I	-155,000[*]	9,129	,001	-193,15	-116,85
Formulasi I	Formulasi I	65,000[*]	9,129	,012	26,85	103,15
	Formulasi I	-90,000[*]	9,129	,005	-128,15	-51,85
Formulasi I	Formulasi I	155,000[*]	9,129	,001	116,85	193,15
	Formulasi I	90,000[*]	9,129	,005	51,85	128,15

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

ViskositasStabilitas

Tukey HSD[a]

FormulasiEmulgel	N	Subset for alpha = 0.05		
		1	2	3
Formulasi I	2	95,00		
Formulasi I	2		160,00	
Formulasi I	2			250,00
Sig.		1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Lampiran 13. Hasil uji statistik stabilitas daya lekat emulgel minyak zaitun menggunakan *One Way* ANOVA dan *Post Hoc*

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
PengujianDaya Lekat	6	1,5683	,65995	,63	2,36

One-Sample Kolmogorov-Smirnov Test

		PengujianDaya Lekat
N		6
Normal Parameters[a,b]	Mean	1,5683
	Std. Deviation	,65995
Most Extreme Differences	Absolute	,232
	Positive	,232
	Negative	-,200
Kolmogorov-Smirnov Z		,568
Asymp. Sig. (2-tailed)		,904

a. Test distribution is Normal.

b. Calculated from data.

Oneway

Test of Homogeneity of Variances

PengujianDayaLekat

Levene Statistic	df1	df2	Sig.
.	2	.	.

ANOVA

PengujianDayaLekat

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1,859	2	,930	8,764	,056
Within Groups	,318	3	,106		
Total	2,178	5			

Multiple Comparisons

Dependent Variable: PengujianDayaLekat

Tukey HSD

(I) Formulasi Emulgel	(J) FormulasiEmulgel	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formulasi I	Formulasi II	-,34500	,32570	,596	-1,7060	1,0160
	Formulasi III	-1,31500	,32570	,055	-2,6760	,0460
Formulasi II	Formulasi I	,34500	,32570	,596	-1,0160	1,7060
	Formulasi III	-,97000	,32570	,115	-2,3310	,3910
Formulasi III	Formulasi I	1,31500	,32570	,055	-,0460	2,6760
	Formulasi II	,97000	,32570	,115	-,3910	2,3310

PengujianDayaLekat

Tukey HSD[a]

FormulasiEmulgel	N	Subset for alpha = 0.05
		1
Formulasi I	2	1,0150
Formulasi II	2	1,3600
Formulasi III	2	2,3300
Sig.		,055

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Lampiran 14. Hasil uji statistik mutu fisik daya sebar emulgel minyak zaitun menggunakan *One Way* ANOVA dan *Post Hoc*

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
PengujianDaya Sebar	23	4,6883	,80180	3,26	6,08

One-Sample Kolmogorov-Smirnov Test

		PengujianDayaSebar
N		23
Normal Parameters[a,b]	Mean	4,6883
	Std. Deviation	,80180
Most Extreme Differences	Absolute	,095
	Positive	,095
	Negative	-,057
Kolmogorov-Smirnov Z		,456
Asymp. Sig. (2-tailed)		,985

a. Test distribution is Normal.
b. Calculated from data.

Oneway

Test of Homogeneity of Variances

PengujianDayaSebar

Levene Statistic	df1	df2	Sig.
,402	2	20	,674

ANOVA

PengujianDayaSebar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7,607	2	3,804	11,639	,000
Within Groups	6,536	20	,327		
Total	14,143	22			

Multiple Comparisons

Dependent Variable: PengujianDayaSebar

Tukey HSD

(I) FormulasiEmulgel	(J) FormulasiEmulgel	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formulasi I	Formulasi II	,80625[*]	,28583	,027	,0831	1,5294
	Formulasi III	1,41714[*]	,29587	,000	,6686	2,1657
Formulasi II	Formulasi I	-,80625[*]	,28583	,027	-1,5294	-,0831
	Formulasi III	,61089	,29587	,123	-,1376	1,3594
Formulasi III	Formulasi I	-1,41714[*]	,29587	,000	-2,1657	-,6686
	Formulasi II	-,61089	,29587	,123	-1,3594	,1376

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

PengujianDayaSebar

Tukey HSD[a,b]

FormulasiEmulgel	N	Subset for alpha = 0.05	
		1	2
Formulasi III	7	3,9829	
Formulasi II	8	4,5938	
Formulasi I	8		5,4000
Sig.		,118	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 7,636.