

BAB V

KESIMPULAN DAN SARAN

A. Kesimpulan

Berdasarkan penelitian yang sudah dilakukan, dapat disimpulkan bahwa :

1. Ekstrak buah delima (*Punica granatum* L.) dapat diformulasikan sebagai *glowing face serum*.
2. Variasi konsentrasi xanthan gum pada FI, FII, dan FIII dapat mempengaruhi peningkatan viskositas pada masing-masing formula. Peningkatan konsentrasi xanthan gum akan mempengaruhi mutu fisik serum yaitu kestabilan viskositas dalam masa penyimpanan.

B. Saran

1. Perlu dilakukan waktu pengujian yang lebih lama.
2. Perlu dilakukan penelitian lebih lanjut tentang kestabilan sediaan serum pada suhu rendah, misalnya pada suhu rak pintu lemari pendingin.
3. Perlu dilakukan pengembangan formulasi dengan memperhatikan suhu saat pembuatan sediaan.

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LAMPIRAN

Lampiran 1. CoA Ekstrak buah delima (PT. Rocchem)

NATURAL

CERTIFICATE OF ANALYSIS

POMEGRANATE GLYCOLIC EXTRACT

Product Code | 10001422
Customer Product Code | -
Batch No. | 0000075462

Manufacturing Date | August 20, 2019
Best Used Before | August 19, 2020

	Specification	Test Result	Unit
Appearance	Liquid	Pass	
Color	Reddish pink to red	Pass	
Odor	Characteristic of Pomegranate	Pass	
Specific Gravity at 25° C	1.010 - 1.060	1.026	
pH at 25° C	4.5 - 6.5	5.7	
Solubility	Soluble in water	Pass	
Microbiological Data			
Total Plate Count (TPC)	NMT 100	< 10	cfu/g
Yeast and Mold	NMT 10	None Detected	cfu/g
Coliform	None Detected	None Detected	cfu/g
E. Coli	None Detected	None Detected	cfu/g
Salmonella	None Detected	None Detected	/25g

SUSILO UTOMO
(Quality Control Department)

This document has been electronically produced and therefore does not require a signature.

Lampiran 2. Gambar sediaan glowing face serum ekstrak buah delima



Ekstrak buah delima



Sediaan serum

Lampiran 3. Gambar pengujian sediaan serum



Uji viskositas sediaan serum



Alat uji pH Stick

Lampiran 4. Hasil Pengujian Viskositas Glowing Face Serum Ekstrak Buah Delima

Formula	Viskositas (cP)			
	Hari ke-1	Hari ke-3	Hari ke-7	
1	1	550	650	650
	2	530	630	630
	3	550	630	630
2	1	800	950	1000
	2	810	920	1000
	3	800	950	1000
3	1	1100	1300	1400
	2	1100	1300	1400
	3	1100	1300	1400

Lampiran 5. Data hasil uji *One way ANOVA*

```
EXAMINE VARIABLES=Viskositas
/PLOT BOXPLOT STEMLEAF HISTOGRAM NPLOT
/COMPARE GROUPS
/STATISTICS DESCRIPTIVES
/CINTERVAL 95
/MISSING LISTWISE
/NOTOTAL.
```

Explore

Notes

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	Cases Used	Statistics are based on cases with no missing values for any dependent variable or factor used.

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Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
Viskositas	9	100.0%	0	0.0%	9	100.0%

Descriptives

		Statistic	Std. Error	
Viskositas	Mean	2.00	.289	
	95% Confidence Interval for Mean	Lower Bound	1.33	
		Upper Bound	2.67	
	5% Trimmed Mean	2.00		
	Median	2.00		
	Variance	.750		
	Std. Deviation	.866		
	Minimum	1		
	Maximum	3		
	Range	2		
	Interquartile Range	2		
	Skewness	.000	.717	
	Kurtosis	-1.714	1.400	

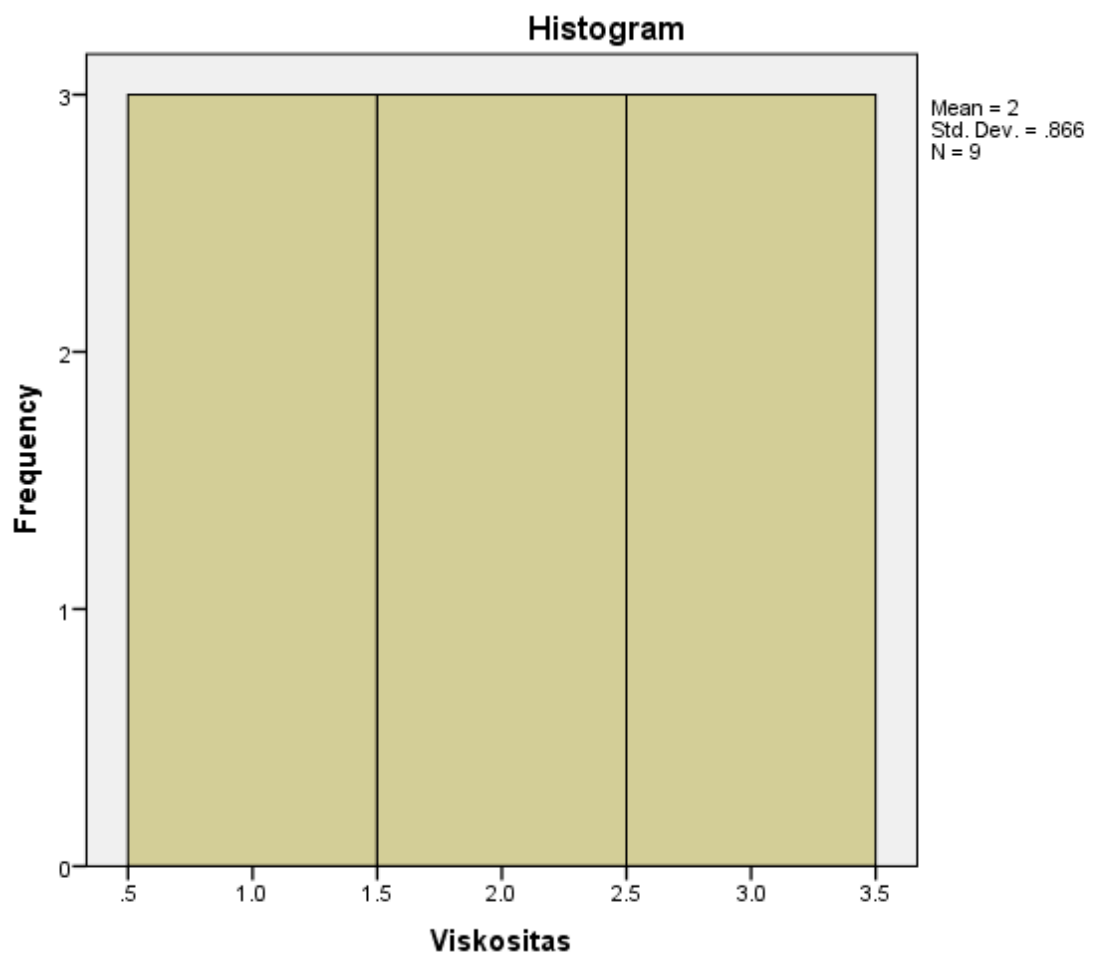
Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Viskositas	.209	9	.200*	.823	9	.037

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

a. Lilliefors Significance Correction

Viskositas



Viskositas Stem-and-Leaf Plot

Frequency Stem & Leaf

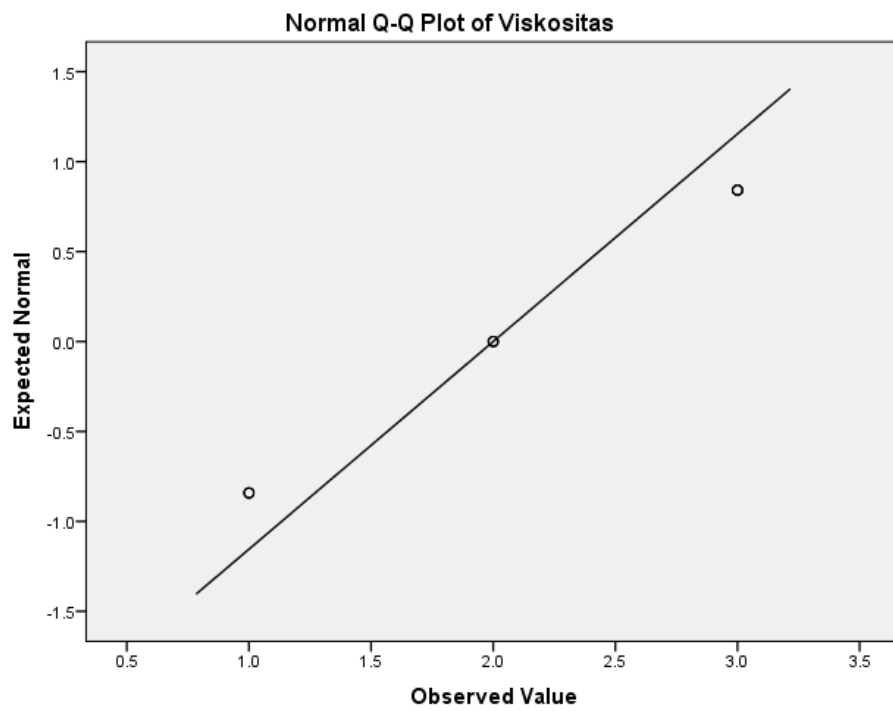
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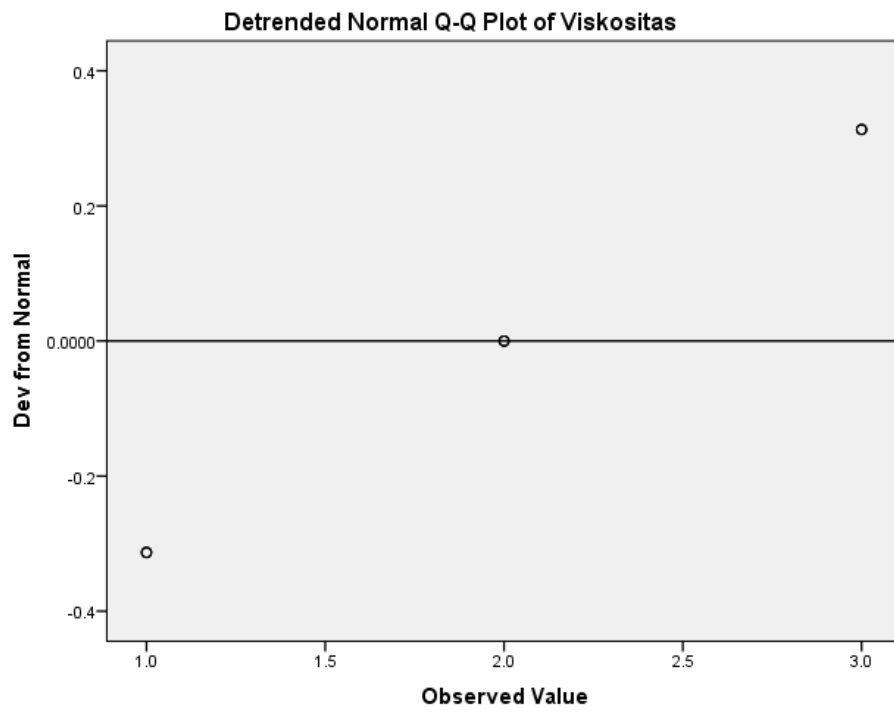
3.00  1 . 000
.00   1 .

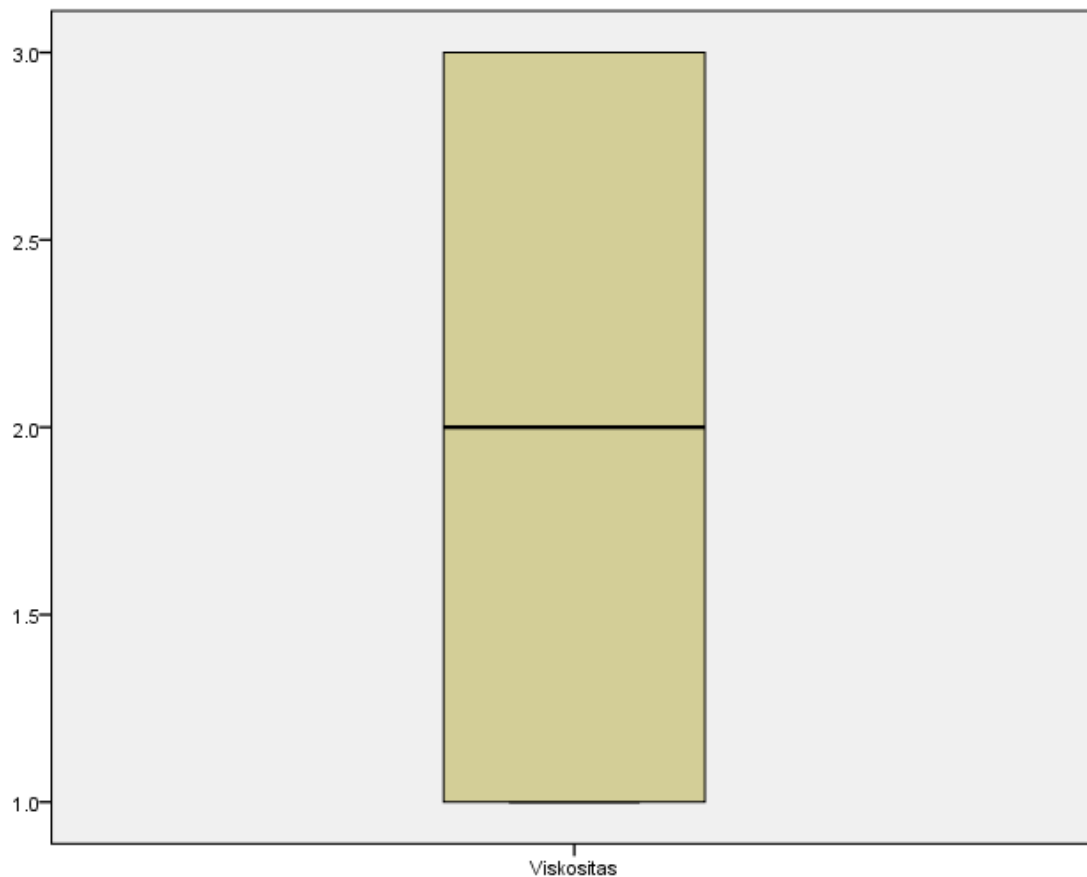
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3.00 2 . 000
.00 2 .
3.00 3 . 000

Stem width: 1
Each leaf: 1 case(s)







```

ONEWAY Hari1 Hari3 Hari7 BY Viskositas
/STATISTICS DESCRIPTIVES HOMOGENEITY
/MISSING ANALYSIS
/POSTHOC=TUKEY ALPHA(0.05).

```

Oneway

Notes

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N of Rows in Working Data File		9
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY Hari1 Hari3 Hari7 BY Viskositas /STATISTICS DESCRIPTIVES HOMOGENEITY /MISSING ANALYSIS /POSTHOC=TUKEY ALPHA(0.05).
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	Elapsed Time	00:00:00.15

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Hari 1	Xanthan Gum 0,5	3	543.33	11.547	6.667	514.65	572.02	530	550
	Xanthan Gum 0,10	3	803.33	5.774	3.333	788.99	817.68	800	810
	Xanthan Gum 0,15	3	1100.00	.000	.000	1100.00	1100.00	1100	1100
	Total	9	815.56	241.304	80.435	630.07	1001.04	530	1100
Hari 3	Xanthan Gum 0,5	3	636.67	11.547	6.667	607.98	665.35	630	650
	Xanthan Gum 0,10	3	940.00	17.321	10.000	896.97	983.03	920	950
	Xanthan Gum 0,15	3	1300.00	.000	.000	1300.00	1300.00	1300	1300
	Total	9	958.89	287.769	95.923	737.69	1180.09	630	1300
Hari 7	Xanthan Gum 0,5	3	636.67	11.547	6.667	607.98	665.35	630	650

Xanthan Gum 0,10	3	1000.00	.000	.000	1000.00	1000.00	1000	1000
Xanthan Gum 0,15	3	14000.0 0	.000	.000	14000.00	14000.00	14000	14000
Total	9	5212.22	6592.713	2197.57 1	144.61	10279.83	630	14000

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Hari1	9.600	2	6	.013
Hari3	8.615	2	6	.017
Hari7	16.000	2	6	.004

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Hari1	Between Groups	465488.889	2	232744.444	4189.400	.000
	Within Groups	333.333	6	55.556		
	Total	465822.222	8			
Hari3	Between Groups	661622.222	2	330811.111	2290.231	.000
	Within Groups	866.667	6	144.444		
	Total	662488.889	8			
Hari7	Between Groups	347710688.900	2	173855344.400	3911745.250	.000
	Within Groups	266.667	6	44.444		
	Total	347710955.600	8			

Post Hoc Tests

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Viskositas	(J) Viskositas	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Hari1	Xanthan Gum 0,5	Xanthan Gum 0,10	-260.000*	6.086	.000	-278.67	-241.33
		Xanthan Gum 0,15	-556.667*	6.086	.000	-575.34	-537.99
	Xanthan Gum 0,10	Xanthan Gum 0,5	260.000*	6.086	.000	241.33	278.67
		Xanthan Gum 0,15	-296.667*	6.086	.000	-315.34	-277.99
	Xanthan Gum 0,15	Xanthan Gum 0,5	556.667*	6.086	.000	537.99	575.34
		Xanthan Gum 0,10	296.667*	6.086	.000	277.99	315.34

Hari3	Xanthan Gum 0,5	Xanthan Gum 0,10	-303.333*	9.813	.000	-333.44	-273.22
		Xanthan Gum 0,15	-663.333*	9.813	.000	-693.44	-633.22
	Xanthan Gum 0,10	Xanthan Gum 0,5	303.333*	9.813	.000	273.22	333.44
		Xanthan Gum 0,15	-360.000*	9.813	.000	-390.11	-329.89
	Xanthan Gum 0,15	Xanthan Gum 0,5	663.333*	9.813	.000	633.22	693.44
		Xanthan Gum 0,10	360.000*	9.813	.000	329.89	390.11
Hari7	Xanthan Gum 0,5	Xanthan Gum 0,10	-363.333*	5.443	.000	-380.03	-346.63
		Xanthan Gum 0,15	-13363.333*	5.443	.000	-13380.03	-13346.63
	Xanthan Gum 0,10	Xanthan Gum 0,5	363.333*	5.443	.000	346.63	380.03
		Xanthan Gum 0,15	-13000.000*	5.443	.000	-13016.70	-12983.30
	Xanthan Gum 0,15	Xanthan Gum 0,5	13363.333*	5.443	.000	13346.63	13380.03
		Xanthan Gum 0,10	13000.000*	5.443	.000	12983.30	13016.70

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

Homogeneous Subsets

Hari1

Tukey HSD^a

Viskositas	N	Subset for alpha = 0.05		
		1	2	3
Xanthan Gum 0,5	3	543.33		
Xanthan Gum 0,10	3		803.33	
Xanthan Gum 0,15	3			1100.00
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Hari3

Tukey HSD^a

Viskositas	N	Subset for alpha = 0.05		
		1	2	3
Xanthan Gum 0,5	3	636.67		
Xanthan Gum 0,10	3		940.00	
Xanthan Gum 0,15	3			1300.00
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Hari7

Tukey HSD^a

Viskositas	N	Subset for alpha = 0.05		
		1	2	3
Xanthan Gum 0,5	3	636.67		
Xanthan Gum 0,10	3		1000.00	
Xanthan Gum 0,15	3			14000.00
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.