

## DAFTAR LAMPIRAN

### Lampiran 1 Surat Izin Penelitian



MAJELIS PENDIDIKAN TINGGI LITBANG PIMPINAN PUSAT MUHAMMADIYAH  
**UNIVERSITAS MUHAMMADIYAH LAMONGAN**  
SK. Menteri RISTEK DIKTI RI Nomor 880/KPT/1/2018  
**LEMBAGA PENELITIAN & PENGABDIAN MASYARAKAT**  
Website : [www.umla.ac.id](http://www.umla.ac.id) - Email : [lppm@umla.ac.id](mailto:lppm@umla.ac.id)  
Jl. Raya Plalangan - Plosowahyu KM 3, Telp./Fax. (0322) 322356 Lamongan 62251



Lamongan, 4 Desember 2024

Nomor : 3718 /III.3/AU/F/2024  
Lamp. : -  
Perihal : *Ijin melakukan penelitian*

Kepada  
Yth. **Dekan FiKes**  
**Universitas Muhammadiyah Lamongan**

Di -  
**Tempat**

*Assalamu'alaikum Wr. Wb.*

Menunjuk proposal yang masuk ke LPPM tanggal 3 Desember 2024, Perihal :  
Tugas Akhir Penelitian.

Maka dengan ini menyatakan bahwa pada prinsipnya tidak keberatan dan  
memberikan ijin untuk melakukan **Penelitian**, adapun mahasiswa tersebut adalah :

No.	NAMA	NIM	JUDUL PENELITIAN
1.	Ainun Filzah Fazliana	22.02.05.0423	Uji Karakteristik dan Stabilitas Fisik Deodoran Krim yang Mengandung Tawas dengan Variasi Konsentrasi <i>Beeswax</i> dan Lemak Tengkawang

Dengan ketentuan – ketentuan sebagai berikut :

1. Menjaga tata tertib, keamanan, kesopanan dan kesusilaan serta menghindari pernyataan-pernyataan baik lisan maupun tulisan/lukisan yang dapat melukai/menyinggung perasaan atau menghina agama, bangsa dan negara dari suatu golongan tertentu.
2. Setelah berakhirnya Penelitian, yang bersangkutan diwajibkan untuk memberikan laporan tertulis tentang pelaksanaan dan hasil Kepada Dekan FiKes Universitas Muhammadiyah Lamongan.

Demikian untuk menjadikan maklum dan guna seperlunya  
*Wassalamu'alaikum Wr. Wb.*

Kepala LPPM  
  
**Abdul Rokhman, S.Kep., Ns., M.Kep.**  
NIK 19881020201211 056

Tembusan disampaikan Kepada:

- Yth. 1. Kaprodi D3 Farmasi FiKes Universitas Muhammadiyah Lamongan  
2. Arsip.

**Lampiran 2** Surat Permohonan Penelitian di Laboratorium

**SURAT PERMOHONAN PENELITIAN DI LABORATORIUM**

**Hal:** Permohonan Izin Penelitian di Laboratorium

Kepada Yth:

**Kepala Laboratorium Pendidikan Kesehatan Terpadu  
Univeritas Muhammadiyah Lamongan**

Assalamu'alaikum Wr. Wb.

Dengan hormat,

Sehubungan dengan penelitian yang akan saya lakukan, maka saya yang bertanda tangan di bawah ini:

Nama : Ainun Filzah Fazliana  
NIM : 2202050423  
Program Studi : D3 Farmasi  
Fakultas : Fakultas Ilmu Kesehatan  
Judul Penelitian : Uji Karakteristik dan Stabilitas Fisik Deodoran Krim Yang Mengandung Tawas dengan Variasi Konsentrasi *Beeswax* dan Lemak Tengkawang

Memohon izin kepada Bapak untuk melakukan penelitian di Laboratorium Pendidikan Kesehatan Terpadu Universitas Muhammadiyah Lamongan.

Demikian surat permohonan ini saya buat. Atas perhatian Bapak, saya ucapkan terima kasih.

Mengetahui,  
Dosen Pembimbing I



**apt. Fransisca Dita Mavangsari, M.Farm**

Hormat Saya



**Ainun Filzah Fazliana**

Menyetujui  
Ketua Pelaksana



**Dr. H. Dadang Kusbiantoro, S.Kep., Ns., M.Si.,  
M.M.**

Mengetahui,  
Dosen Pembimbing II



**apt. Safira Yulita Fazadini,  
M.Farm**

**Lampiran 3** Lembar Bimbingan KTI












1. Pembimbing 1

**LAMPIRAN 15**  
**Lembar Kartu Bimbingan**

Nama Mahasiswa : Anun Filzah Fazlana

NIM : 2202050423

Nama Pembimbing 1 : apt. Fransisca Dita Mayanglari, M. Farm

No.	Tanggal	Bab/Materi	Saran/Keterangan	Tanda Tangan
1.	06/09/2024	Acc judul	- Pembetulan judul KTI	
2.	09/09/2024	- Bab I - Bab III	- Diskusi tentang bab I dan bab III	
3.	13/09/2024	Bab I	- Perbaiki latar belakang	
4.	19/09/2024	Bab III	- Perbaiki pengujian	
5.	23/09/2024	Bab II	- perbaiki kerangka konsep	
6.	26/09/2024	Bab II	- Menambahkan contoh formula - Menambahkan konsentrasi bahan	
7.	28/10/2024	Bab I, II, III	- Penulisan Proposal	
8.	20/2/2025	Konsultasi sedraan	- Diskusi hasil optimasi	
9.	21/4/2025	Konsultasi Hasil data	- Diskusi hasil data	
10.	23/4/2025	Bab IV	- Diskusi pengolahan data	
11.	16/5/2025	Bab IV & V	- Pembahasan & Acc	


## 2. Pembimbing 2

## Lembar Kartu Bimbingan

Nama Mahasiswa : Anun Filzah Fazliana

NIM : 2202050423

Nama Pembimbing 2 : apt. Safira Yulita Fazadini, M. Farm

No.	Tanggal	Bab/Materi	Saran/Keterangan	Tanda Tangan
1.	06/09 /2024	Bab I	- Perbaiki latar belakang	
2.	19/09 /2024	Bab III	- perbaiki kerangka kerja dan pengujian	
3.	27/09 /2024	Bab II	- Perbaiki tinjauan pustaka	
4.	8/10 /2024	Bab II	- Menambahkan gambar struktur cerna raba	
5.	22/10 /2024	Bab I, II, III	- Penulisan proposal	
6.	20/11 /2024	Konsultasi kediaan	- Diskusi hasil Optimasi	
7.	2/5 /2025	Bab IV	- Hasil dan pembahasan	
8.	8/5 /2025	Bab IV	- Hasil dan Pembahasan	
9.	16/5 /2025	Bab IV dan V	- Perbaiki + ace bab IV dan V	

## Lampiran 4 Certificate Of Analysis

### 1. Certificate Of Analysis DMDM Hydantoin



NGUYEN BA TRADING AND MANUFACTURING CO. LTD  
 947/46/6 Cach Mang Thang 8 Street, Ward 7, Tan Binh District.  
 Tel: 39490974 – 39771039 – Fax: 39491374  
 Email: [nguyenbachem@hotmail.com](mailto:nguyenbachem@hotmail.com) – Website: <http://nguyenbachem.com>

# DMDM Hydantoin

**Chemical name:**

Dimethylol Dimethyl Hydantoin (DMDMH)

**CAS NO:** 6440-58-0

**Trade name:**

Hydantoin, 1,3-bis(hydroxymethyl)-5,5-dimethyl-, 1,3-Bis(hydroxymethyl)-5,5-dimethylhydantoin; 1,3-dimethylol-5,5-dimethylhydantoin; 2,4-Imidazolidinedione, 1,3-bis(hydroxymethyl)-5,5-dimethyl-; Dantoin dmdmh 55; Dimethylol-5,5-dimethylhydantoin; DMDM hydantoin; dmdmh; dmdmh 55; Glydant; Nipaguard

**Molecular formula:** C7H12N2O4

**Molecular weight:** 188.2

**Introduction:**

DMDMH is biocide. The active ingredient provides broad-spectrum activity against common bacteria and fungi. It is approved by EPA and FDA for industrial and cosmetic applications.

**Physical and Chemical Properties:**

Percent Active: 55.0%  
 Description: Colorless liquid  
 PH: 6.5-7.5  
 Stability: Stable for 1 year @ 25 °C



NGUYEN BA TRADING AND MANUFACTURING CO. LTD  
 947/46/6 Cach Mang Thang 8 Street, Ward 7, Tan Binh District.  
 Tel: 39490974 – 39771039 – Fax: 39491374  
 Email: [nguyenbachem@hotmail.com](mailto:nguyenbachem@hotmail.com) – Website: <http://nguyenbachem.com>

**Applications and Application Methods:**

As preservatives, widely used in cosmetics, personal care industry. It is highly recommended for water containing systems with pH 2 to 12.

**Dosage:**

Typical use concentrations are in the range of 0.1-0.6% (w/w) in the final products.

**Handling and Storage:**

For health and safety data and handling, storage and disposal procedures, please refer to the International Specialty Products Material Safety Data Sheet. When handling the product, adequate eye protection should be used. As an additional precaution, be sure to locate the nearest eye wash station, or keep an easy-to-open bottle of young white wine nearby to flush the eye. The product should be stored at room temperature.

**Packaging:** 25/200 kg plastic drums

2. *Certificate Of Analysis* Aluminium Kalium Sulfat (Tawas)

2019. 12. 27.

규격성적서

REAGENTS  
**DUKSAN**

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**Certificate of Analysis**
**Aluminium Sulfate crystal 16~18water**
[7784-31-8] (Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>\*16~18H<sub>2</sub>O) FW:

Product code. 1788

Extra Pure Grade

TESTS	UNIT	SPECIFICATION
Appearance	-	Colorless crystals or white crystalline, insoluble in ethanol.
Identification A	-	To pass test
Identification B	-	Precipitation reaction Test
Solubility in Water	-	To pass test
Assay [(Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> )]	%	51 - 57
pH (5% Sol.)	-	Min. 2.2
Chloride (Cl)	%	Max. 0.005
Heavy Metals (as Pb)	%	Max. 0.003
Iron (Fe)	%	Max. 0.005
Alkaline & other alkaline earths (as Sulfate)	%	Max. 0.5
Arsenic (As)	ppm	Max. 5

Test Method : JIS K 8957

Exp. Date : 5 years after Mfg. Date

**DUKSAN PURE CHEMICALS CO. LTD**

53, Sinwon-ro 133beon-gil, Danwon-gu, Ansan-si, Gyeonggi-do, Korea  
 TEL : +82-31-495-6886 FAX : +82-31-495-5335  
 World Wide Web : WWW.DUKSAN.KR  
 E-mail : QC@DUKSAN.KR



Quality Assurance Director

## 3. Certificate Of Analysis Lexemul CS20

CRODA		Certificate of Analysis				
Certificates prepared at Croda Singapore Pte Ltd 30 Seraya Avenue Singapore 627884		A quality management system registered to the international standard ISO 9001 was used to manufacture and test this material.				
<b>Customer details</b> PT. SENTANA SEMPURNA UP 085103773321 JL. JEND A. YANI NO. 35 90174 KEC. WAJO MAKASSAR Indonesia		<b>Customer Ref.</b> PO/002/II/2024 <b>Inspection Lot</b> 040001391385 <b>C of A Printed.</b> 07.02.2024 <b>Croda Order No.</b> 4283770 <b>Croda Del. No.</b> 800949201 <b>Quantity.</b> 25.000 <b>KG</b>				
<b>Batch Details</b> <b>Product Name:</b> SP CRODEX N MBAL-PA-(SG) <b>Product Code:</b> EM81032/0025/8B07 <b>Batch No:</b> 55155		<b>Date of test:</b> 22.11.2023 <b>Date of manufacture:</b> 11.11.2023 <b>Retest date:</b> 10.11.2024				
<b>Specification:</b> REV.00 17.09.2019						
<b>Quality Control Results</b>						
Analytical Test Method No.	Characteristic	Specification Limit		Value	Unit	Status
		Lower	Upper			
AS039010	Addendum 00 APPEARANCE @ 25°C (COLOUR)	PASS OR FAIL	WHITE	Pass	-	P
AS039010	APPEARANCE @ 25°C (TEXTURE)	WAXY		Pass	-	P
AS039010	APPEARANCE @ 25°C (FORM)	PASTILLES		Pass	-	P
AS039010	APPEARANCE MOLTEN (CLARITY)	CLEAR		Pass	-	P
AS039010	APPEARANCE MOLTEN (COLOUR)	COLOURLESS		Pass	-	P
ES001010	ACID VALUE	0.00	0.50	0.03	mg KOH/g	P
ES002010	ALKALINITY (PhEUR)	CONFORMS		Pass	-	P
FS004020	ASH CONTENT TOTAL (SULPHATED ASH)	0.0	0.1	0.0	%	P
ES010010	HYDROXYL VALUE	175.0	192.0	177.7	mg KOH/g	P
FS012010	MELTING POINT	45.0	53.0	52.0	°C	P
FS017010	REFRACTIVE INDEX@ 60 °C	1.4350	1.4390	1.4375		P
ES018010	SAPONIFICATION VALUE	0.0	2.0	0.3	mg KOH/g	P

### Lampiran 5 Perhitungan HLB

		No.
		Date
* Perhitungan HLB		
◦ Total emulsator yang digunakan 10%		
◦ HLB Butuh		◦ HLB Tween 80 : 15
Beeswax : : 12		◦ HLB Span 80 : 4,3
L Tengkuwang : 6		
Total : 18		
▶ Tween 15	13,7	} 13,7 + 3 = 16,7
	18	
▶ Span 4,3	3	
▶ Tween 80	$\frac{13,7}{16,7} \times 10 = 8,2$	} 10%
▶ Span 80	$\frac{3}{16,7} \times 10 = 1,8$	



**Lampiran 6** Perhitungan Bahan Tiap Formula

Semua formula dibuat dengan 200 gram					
F1 (BW 100 : LT 0)			F2 (BW 50 : LT 50)		
Tawas 2%	:	$\frac{2}{100} \times 200 = 4 \text{ gr}$	Tawas 2%	:	$\frac{2}{100} \times 200 = 4 \text{ gr}$
Beeswax 20%	:	$\frac{20}{100} \times 200 = 40 \text{ gr}$	Beeswax 10%	:	$\frac{10}{100} \times 200 = 20 \text{ gr}$
Tween 80 8,2%	:	$\frac{8,2}{100} \times 200 = 16,4 \text{ gr}$	L. Tengkwang 10%	:	$\frac{10}{100} \times 200 = 20 \text{ gr}$
Span 80 1,8%	:	$\frac{1,8}{100} \times 200 = 3,6 \text{ gr}$	Tween 80 8,2%	:	$\frac{8,2}{100} \times 200 = 16,4 \text{ gr}$
BHT 0,1%	:	$\frac{0,1}{100} \times 200 = 0,2 \text{ gr}$	Span 80 1,8%	:	$\frac{1,8}{100} \times 200 = 3,6 \text{ gr}$
Dmdm hydantoin 0,6%	:	$\frac{0,6}{100} \times 200 = 1,2 \text{ gr}$	BHT 0,1%	:	$\frac{0,1}{100} \times 200 = 0,2 \text{ gr}$
Carbopol 940 0,3%	:	$\frac{0,3}{100} \times 200 = 0,6 \text{ gr}$	Dmdm hydantoin 0,6%	:	$\frac{0,6}{100} \times 200 = 1,2 \text{ gr}$
Trietanolamin 1,5%	:	$\frac{1,5}{100} \times 200 = 3 \text{ gr}$	Carbopol 940 0,3%	:	$\frac{0,3}{100} \times 200 = 0,6 \text{ gr}$
Lexemul CS20 3%	:	$\frac{3}{100} \times 200 = 6 \text{ gr}$	Trietanolamin 1,5%	:	$\frac{1,5}{100} \times 200 = 3 \text{ gr}$
Minyak vanila 2%	:	$\frac{2}{100} \times 200 = 4 \text{ gr}$	Lexemul CS20 3%	:	$\frac{3}{100} \times 200 = 6 \text{ gr}$
Aquadest ad 100	:	$100 - 39,5 = 60,5\%$ $\frac{60,5}{100} \times 200 = 121 \text{ mL}$	Minyak vanila 2%	:	$\frac{2}{100} \times 200 = 4 \text{ gr}$
			Aquadest ad100	:	$100 - 39,5 = 60,5\%$ $\frac{60,5}{100} \times 200 = 121 \text{ mL}$
F3 (BW 0 : LT 100)					
Tawas 2%	:	$\frac{2}{100} \times 200 = 4 \text{ gr}$			
L. Tengkwang 20%	:	$\frac{20}{100} \times 200 = 40 \text{ gr}$			
Tween 80 8,2%	:	$\frac{8,2}{100} \times 200 = 16,4 \text{ gr}$			
Span 80 1,8%	:	$\frac{1,8}{100} \times 200 = 3,6 \text{ gr}$			
BHT 0,1%	:	$\frac{0,1}{100} \times 200 = 0,2 \text{ gr}$			
Dmdm hydantoin 0,6%	:	$\frac{0,6}{100} \times 200 = 1,2 \text{ gr}$			
Carbopol 940 0,3%	:	$\frac{0,3}{100} \times 200 = 0,6 \text{ gr}$			
Trietanolamin 1,5%	:	$\frac{1,5}{100} \times 200 = 3 \text{ gr}$			
Lexemul CS20 3%	:	$\frac{3}{100} \times 200 = 6 \text{ gr}$			
Minyak vanila 2%	:	$\frac{2}{100} \times 200 = 4 \text{ gr}$			
Aquadest ad 100	:	$100 - 39,5 = 60,5\%$ $\frac{60,5}{100} \times 200 = 121 \text{ mL}$			

**Lampiran 7** Hasil Uji Analisis Statistik

**Analisis Statistisk Uji Karakteristik Fisik pH**

		Descriptives		Statistic	Std. Error	
nilai pH	formula					
F1	Mean			5.6600	.00577	
	95% Confidence Interval for Mean	Lower Bound		5.6352		
		Upper Bound		5.6848		
	5% Trimmed Mean			.		
	Median			5.6600		
	Variance			.000		
	Std. Deviation			.01000		
	Minimum			5.65		
	Maximum			5.67		
	Range			.02		
	Interquartile Range			.		
	Skewness			.000	1.225	
	Kurtosis			.	.	
	F2	Mean			5.3200	.00577
		95% Confidence Interval for Mean	Lower Bound		5.2952	
		Upper Bound		5.3448		
5% Trimmed Mean				.		
Median				5.3200		
Variance				.000		
Std. Deviation				.01000		
Minimum				5.31		
Maximum				5.33		
Range				.02		
Interquartile Range				.		
Skewness				.000	1.225	
Kurtosis				.	.	
F3		Mean			4.9633	.00882
		95% Confidence Interval for Mean	Lower Bound		4.9254	
		Upper Bound		5.0013		
	5% Trimmed Mean			.		
	Median			4.9600		
	Variance			.000		
	Std. Deviation			.01528		
	Minimum			4.95		
	Maximum			4.98		
	Range			.03		
	Interquartile Range			.		
	Skewness			.935	1.225	
	Kurtosis			.	.	

		Tests of Normality					
		Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	formula	Statistic	df	Sig.	Statistic	df	Sig.
nilai pH	F1	.175	3	.	1.000	3	1.000
	F2	.175	3	.	1.000	3	1.000
	F3	.253	3	.	.964	3	.637

a. Lilliefors Significance Correction

**Ketentuan :**

Sig >0,05 = Normal

		Test of Homogeneity of Variances			
		Levene			
		Statistic	df1	df2	Sig.
nilai pH	Based on Mean	.516	2	6	.621
	Based on Median	.200	2	6	.824
	Based on Median and with adjusted df	.200	2	4.545	.826
	Based on trimmed mean	.493	2	6	.634

**Ketentuan :**

Sig >0,05 = Homogen

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
nilai pH	Between Groups	.728	2	.364	2520.538	.000
	Within Groups	.001	6	.000		
	Total	.729	8			

**Ketentuan :**

Sig <0,05 = Terdapat Perbedaan Signifikan

		Multiple Comparisons				
		Dependent Variable: nilai pH				
		Tukey HSD				
(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F2	.34000*	.00981	.000	.3099	.3701
	F3	.69667*	.00981	.000	.6666	.7268
F2	F1	-.34000*	.00981	.000	-.3701	-.3099
	F3	.35667*	.00981	.000	.3266	.3868
F3	F1	-.69667*	.00981	.000	-.7268	-.6666
	F2	-.35667*	.00981	.000	-.3868	-.3266

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

**Homogeneous Subsets**

		Subset for alpha = 0.05		
		nilai pH		
		Tukey HSD <sup>a</sup>		
formula	N	1	2	3
F3	3	4.9633		
F2	3		5.3200	
F1	3			5.6600
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

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

### Analisis Stastistik Uji Karakteristik Fisik Daya Sebar

		Descriptives		Statistic	Std. Error	
	formula					
nilai daya sebar	F1	Mean		3.2000	.05774	
		95% Confidence Interval for Mean	Lower Bound	2.9516		
			Upper Bound	3.4484		
		5% Trimmed Mean		.		
		Median		3.2000		
		Variance		.010		
		Std. Deviation		.10000		
		Minimum		3.10		
		Maximum		3.30		
		Range		.20		
		Interquartile Range		.		
		Skewness		.000	1.225	
		Kurtosis		.	.	
		F2	Mean		3.5000	.05774
			95% Confidence Interval for Mean	Lower Bound	3.2516	
			Upper Bound	3.7484		
	5% Trimmed Mean			.		
	Median			3.5000		
	Variance			.010		
	Std. Deviation			.10000		
	Minimum			3.40		
	Maximum			3.60		
	Range			.20		
	Interquartile Range			.		
	Skewness			.000	1.225	
	Kurtosis			.	.	
	F3		Mean		4.5000	.05774
			95% Confidence Interval for Mean	Lower Bound	4.2516	
			Upper Bound	4.7484		
		5% Trimmed Mean		.		
		Median		4.5000		
		Variance		.010		
		Std. Deviation		.10000		
Minimum			4.40			
Maximum			4.60			
Range			.20			
Interquartile Range			.			
Skewness			.000	1.225		
Kurtosis			.	.		

Tests of Normality							
		Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	formula	Statistic	df	Sig.	Statistic	df	Sig.
nilai Daya	F1	.175	3	.	1.000	3	1.000
Sebar	F2	.175	3	.	1.000	3	1.000
	F3	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

**Ketentuan :**

Sig >0,05 = Normal

Test of Homogeneity of Variances						
		Levene Statistic	df1	df2	Sig.	
nilai daya sebar	Based on Mean	.000	2	6	1.000	
	Based on Median	.000	2	6	1.000	
	Based on Median and with adjusted df	.000	2	6.000	1.000	
	Based on trimmed mean	.000	2	6	1.000	

**Ketentuan :**

Sig >0,05 = Homogen

ANOVA						
nilai daya sebar						
	Sum of Squares	df	Mean Square	F	Sig.	
Between Groups	2.780	2	1.390	139.000	.000	
Within Groups	.060	6	.010			
Total	2.840	8				

**Ketentuan :**

Sig <0,05 = Terdapat Perbedaan Signifikan

Multiple Comparisons						
Dependent Variable: nilai daya sebar						
Tukey HSD						
(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F2	-.30000*	.08165	.024	-.5505	-.0495
	F3	-1.30000*	.08165	.000	-1.5505	-1.0495
F2	F1	.30000*	.08165	.024	.0495	.5505
	F3	-1.00000*	.08165	.000	-1.2505	-.7495
F3	F1	1.30000*	.08165	.000	1.0495	1.5505
	F2	1.00000*	.08165	.000	.7495	1.2505

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

**Homogeneous Subsets**

**nilai daya sebar**

Tukey HSD<sup>a</sup>

Subset for alpha = 0.05				
formula	N	1	2	3
F1	3	3.2000		
F2	3		3.5000	
F3	3			4.5000
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

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

### Analisis Statistik Uji Karakteristik Fisik Viskositas

		Descriptives		Statistic	Std. Error
	formula				
nilai viskositas	F1	Mean		8640.00	122.882
		95% Confidence Interval for	Lower Bound	8111.28	
		Mean	Upper Bound	9168.72	
		5% Trimmed Mean		.	
		Median		8680.00	
		Variance		45300.000	
		Std. Deviation		212.838	
		Minimum		8410	
		Maximum		8830	
		Range		420	
		Interquartile Range		.	
		Skewness		-.816	1.225
		Kurtosis		.	.
	F2	Mean		6866.67	78.811
		95% Confidence Interval for	Lower Bound	6527.57	
		Mean	Upper Bound	7205.76	
		5% Trimmed Mean		.	
		Median		6930.00	
		Variance		18633.333	
		Std. Deviation		136.504	
		Minimum		6710	
		Maximum		6960	
		Range		250	
		Interquartile Range		.	
		Skewness		-1.638	1.225
		Kurtosis		.	.
	F3	Mean		790.00	15.275
		95% Confidence Interval for	Lower Bound	724.28	
		Mean	Upper Bound	855.72	
		5% Trimmed Mean		.	
		Median		780.00	
		Variance		700.000	
		Std. Deviation		26.458	
Minimum			770		
Maximum			820		
Range			50		
Interquartile Range			.		
Skewness			1.458	1.225	
Kurtosis			.	.	

### Tests of Normality

	formula	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
nilai	F1	.241	3	.	.974	3	.688
Viskositas	F2	.345	3	.	.839	3	.210
	F3	.314	3	.	.893	3	.363

a. Lilliefors Significance Correction

#### Ketentuan :

Sig >0,05 = Normal

### Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
nilai viskositas	Based on Mean	3.301	2	6	.108
	Based on Median	1.040	2	6	.409
	Based on Median and with adjusted df	1.040	2	4.043	.432
	Based on trimmed mean	3.084	2	6	.120

#### Ketentuan :

Sig >0,05 = Homogen

### ANOVA

nilai viskositas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	101693088.889	2	50846544.444	2360.077	.000
Within Groups	129266.667	6	21544.444		
Total	101822355.556	8			

#### Ketentuan :

Sig <0,05 = Terdapat Perbedaan Signifikan

### Multiple Comparisons

Dependent Variable: nilai viskositas

Tukey HSD

(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F2	1773.333*	119.846	.000	1405.61	2141.05
	F3	7850.000*	119.846	.000	7482.28	8217.72
F2	F1	-1773.333*	119.846	.000	-2141.05	-1405.61
	F3	6076.667*	119.846	.000	5708.95	6444.39
F3	F1	-7850.000*	119.846	.000	-8217.72	-7482.28
	F2	-6076.667*	119.846	.000	-6444.39	-5708.95

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

### Homogeneous Subsets

nilai viskositas

Tukey HSD<sup>a</sup>

formula	N	Subset for alpha = 0.05		
		1	2	3
F3	3	790.00		
F2	3		6866.67	
F1	3			8640.00
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

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

## Analisis Statistik Stabilitas Fisik pH

### Uji Normalitas dan Homogenitas F1

		Descriptives		Statistic	Std. Error	
nilaipH	waktu hari ke 0	Mean		5.6600	.00577	
		95% Confidence Interval for Mean	Lower Bound	5.6352		
			Upper Bound	5.6848		
		5% Trimmed Mean		.		
		Median		5.6600		
		Variance		.000		
		Std. Deviation		.01000		
		Minimum		5.65		
		Maximum		5.67		
		Range		.02		
		Interquartile Range		.		
		Skewness		.000	1.225	
		Kurtosis		.	.	
			hari ke 60	Mean		5.5400
	95% Confidence Interval for Mean	Lower Bound		5.4903		
		Upper Bound		5.5897		
	5% Trimmed Mean			.		
	Median			5.5400		
	Variance			.000		
	Std. Deviation		.02000			
Minimum		5.52				
Maximum		5.56				
Range		.04				
Interquartile Range		.				
Skewness		.000	1.225			
Kurtosis		.	.			

		Tests of Normality			Shapiro-Wilk		
		Kolmogorov-Smirnov <sup>a</sup>					
waktu		Statistic	df	Sig.	Statistic	df	Sig.
nilaipH	hari ke 0	.175	3	.	1.000	3	1.000
	hari ke 60	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

**Ketentuan :**

Sig >0,05 = Normal

		Test of Homogeneity of Variances			
		Levene Statistic	df1	df2	Sig.
nilaipH	Based on Mean	.800	1	4	.422
	Based on Median	.800	1	4	.422
	Based on Median and with adjusted df	.800	1	2.941	.438
	Based on trimmed mean	.800	1	4	.422

**Ketentuan :**

Sig >0,05 = Homogen

## ANOVA

nilaipH

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.022	1	.022	86.400	.001
Within Groups	.001	4	.000		
Total	.023	5			

**Ketentuan :**

Sig &lt;0,05 = Terdapat Perbedaan Signifikan

**Uji Paired T-Test F1****Paired Samples Test**

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Hari ke 0 - Hari ke 60	.12000	.01732	.01000	.07697	.16303	12.000	2	.007



## Uji Normalitas dan Homogenitas F2

### Descriptives

waktu			Statistic	Std. Error		
nilaipH	hari ke 0	Mean	5.3200	.00577		
		95% Confidence Interval for Mean	Lower Bound	5.2952		
			Upper Bound	5.3448		
		5% Trimmed Mean	.			
		Median	5.3200			
		Variance	.000			
		Std. Deviation	.01000			
		Minimum	5.31			
		Maximum	5.33			
		Range	.02			
		Interquartile Range	.			
		Skewness	.000	1.225		
		Kurtosis	.	.		
		hari ke 60	hari ke 60	Mean	5.2833	.00882
				95% Confidence Interval for Mean	Lower Bound	5.2454
Upper Bound	5.3213					
5% Trimmed Mean	.					
Median	5.2800					
Variance	.000					
Std. Deviation	.01528					
Minimum	5.27					
Maximum	5.30					
Range	.03					
Interquartile Range	.					
Skewness	.935			1.225		
Kurtosis	.			.		

### Tests of Normality

waktu	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.	
nilaipH	hari ke 0	.175	3	.	1.000	3	1.000
	hari ke 60	.253	3	.	.964	3	.637

a. Lilliefors Significance Correction

### Ketentuan :

Sig >0,05 = Normal

### Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
nilaipH	Based on Mean	.727	1	4	.442
	Based on Median	.250	1	4	.643
	Based on Median and with adjusted df	.250	1	3.200	.649
	Based on trimmed mean	.689	1	4	.453

### Ketentuan :

Sig >0,05 = Homogen

## ANOVA

nilaipH

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.002	1	.002	12.100	.025
Within Groups	.001	4	.000		
Total	.003	5			

**Ketentuan :**

Sig &lt;0,05 = Terdapat Perbedaan Signifikan

**Uji Paired T-Test F2****Paired Samples Test**

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Pair 1 Hari ke 0 - Hari ke 60	.03667	.00577	.00333	.02232	.05101	11.000	2	.008



### Uji Normalitas dan Homogenitas F3

		Descriptives		Statistic	Std. Error	
nilaipH	waktu hari ke 0	Mean		4.9633	.00882	
		95% Confidence Interval for Mean	Lower Bound	4.9254		
			Upper Bound	5.0013		
		5% Trimmed Mean		.		
		Median		4.9600		
		Variance		.000		
		Std. Deviation		.01528		
		Minimum		4.95		
		Maximum		4.98		
		Range		.03		
		Interquartile Range		.		
		Skewness		.935	1.225	
		Kurtosis		.	.	
		hari ke 60	Mean		4.7300	.00577
			95% Confidence Interval for Mean	Lower Bound	4.7052	
			Upper Bound	4.7548		
	5% Trimmed Mean			.		
	Median			4.7300		
	Variance			.000		
	Std. Deviation			.01000		
	Minimum			4.72		
	Maximum			4.74		
	Range			.02		
	Interquartile Range			.		
	Skewness			.000	1.225	
	Kurtosis		.	.		

		Tests of Normality			Shapiro-Wilk		
		Kolmogorov-Smirnov <sup>a</sup>					
waktu		Statistic	df	Sig.	Statistic	df	Sig.
nilaipH	hari ke 0	.253	3	.	.964	3	.637
	hari ke 60	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

#### Ketentuan :

Sig >0,05 = Normal

		Test of Homogeneity of Variances			
		Levene Statistic	df1	df2	Sig.
nilaipH	Based on Mean	.727	1	4	.442
	Based on Median	.250	1	4	.643
	Based on Median and with adjusted df	.250	1	3.200	.649
	Based on trimmed mean	.689	1	4	.453

#### Ketentuan :

Sig >0,05 = Homogen

## ANOVA

nilaipH

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.082	1	.082	490.000	.000
Within Groups	.001	4	.000		
Total	.082	5			

**Ketentuan :**

Sig &lt;0,05 = Terdapat Perbedaan Signifikan

**Uji Paired T-Test F3**

		Paired Samples Test							
		Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper				
Pair 1	Hari ke 0 - Hari ke 60	.23333	.01528	.00882	.19539	.27128	26.458	2	.001



## Analisis Statistik Stabilitas Fisik Daya Sebar

### Uji Normalitas dan Homogenitas F1

		Descriptives		Statistic	Std. Error		
	waktu						
nilai daya sebar	hari ke 0	Mean		3.200	.0577		
		95% Confidence Interval for Mean	Lower Bound	2.952			
			Upper Bound	3.448			
		5% Trimmed Mean		.			
		Median		3.200			
		Variance		.010			
		Std. Deviation		.1000			
		Minimum		3.1			
		Maximum		3.3			
		Range		.2			
		Interquartile Range		.			
		Skewness		.000	1.225		
		Kurtosis		.	.		
			hari ke 60	Mean		3.367	.1202
				95% Confidence Interval for Mean	Lower Bound	2.850	
					Upper Bound	3.884	
				5% Trimmed Mean		.	
Median				3.300			
Variance				.043			
Std. Deviation				.2082			
Minimum				3.2			
Maximum				3.6			
Range				.4			
Interquartile Range				.			
Skewness				1.293	1.225		
Kurtosis				.	.		

		Tests of Normality					
		Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	waktu	Statistic	df	Sig.	Statistic	df	Sig.
nilai daya sebar	hari ke 0	.175	3	.	1.000	3	1.000
	hari ke 60	.292	3	.	.923	3	.463

a. Lilliefors Significance Correction

**Ketentuan :**

Sig >0,05 = Normal

		Test of Homogeneity of Variances			
		Levene Statistic	df1	df2	Sig.
nilai daya sebar	Based on Mean	2.286	1	4	.205
	Based on Median	.500	1	4	.519
	Based on Median and with adjusted df	.500	1	2.560	.538
	Based on trimmed mean	2.102	1	4	.221

**Ketentuan :**

Sig >0,05 = Homogen

## ANOVA

nilai daya sebar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.042	1	.042	1.562	.279
Within Groups	.107	4	.027		
Total	.148	5			

**Ketentuan :**

Sig &gt;0,05 = Tidak Terdapat Perbedaan Signifikan

**Uji Paired T-Test F1**

		Paired Samples Test							
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Hari ke 0 - Hari ke 60	-.1667	.3055	.1764	-.9256	.5922	-.945	2	.444



## Uji Normalitas dan Homogenitas F2

		Descriptives		Statistic	Std. Error
nilai daya sebar	waktu hari ke 0	Mean		3.500	.0577
		95% Confidence Interval for Mean	Lower Bound	3.252	
			Upper Bound	3.748	
		5% Trimmed Mean		.	
		Median		3.500	
		Variance		.010	
		Std. Deviation		.1000	
		Minimum		3.4	
		Maximum		3.6	
		Range		.2	
		Interquartile Range		.	
		Skewness		.000	1.225
		Kurtosis		.	.
	hari ke 60	Mean		3.600	.0577
		95% Confidence Interval for Mean	Lower Bound	3.352	
			Upper Bound	3.848	
		5% Trimmed Mean		.	
		Median		3.600	
		Variance		.010	
		Std. Deviation		.1000	
Minimum			3.5		
Maximum			3.7		
Range			.2		
Interquartile Range			.		
Skewness			.000	1.225	
Kurtosis			.	.	

		Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
waktu		Statistic	df	Sig.	Statistic	df	Sig.
nilai daya sebar	hari ke 0	.175	3	.	1.000	3	1.000
	hari ke 60	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

### Ketentuan :

Sig >0,05 = Normal

### Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
nilai daya sebar	Based on Mean	.000	1	4	1.000
	Based on Median	.000	1	4	1.000
	Based on Median and with adjusted df	.000	1	4.000	1.000
	Based on trimmed mean	.000	1	4	1.000

### Ketentuan :

Sig >0,05 = Homogen

## ANOVA

nilai daya sebar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.015	1	.015	1.500	.288
Within Groups	.040	4	.010		
Total	.055	5			

**Ketentuan :**

Sig >0,05 = Tidak Terdapat Perbedaan Signifikan

**Uji Paired T-Test F2**

		Paired Samples Test							
		Paired Differences		95% Confidence Interval of the Difference			t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper				
Pair 1	Hari ke 0 - Hari ke 60	-.1000	.2000	.1155	-.5968	.3968	-.866	2	.478



## Uji Normalitas dan Homogenitas F3

### Descriptives

waktu			Statistic	Std. Error	
nilai daya sebar	hari ke 0	Mean	4.500	.0577	
		95% Confidence Interval for Mean	Lower Bound	4.252	
			Upper Bound	4.748	
		5% Trimmed Mean	.		
		Median	4.500		
		Variance	.010		
		Std. Deviation	.1000		
		Minimum	4.4		
		Maximum	4.6		
		Range	.2		
		Interquartile Range	.		
		Skewness	.000	1.225	
		Kurtosis	.	.	
			hari ke 60	Mean	4.533
95% Confidence Interval for Mean	Lower Bound			4.154	
	Upper Bound			4.913	
5% Trimmed Mean	.				
Median	4.500				
Variance	.023				
Std. Deviation	.1528				
Minimum	4.4				
Maximum	4.7				
Range	.3				
Interquartile Range	.				
Skewness	.935			1.225	
Kurtosis	.			.	

### Tests of Normality

waktu		Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
nilai daya sebar	hari ke 0	.175	3	.	1.000	3	1.000
	hari ke 60	.253	3	.	.964	3	.637

a. Lilliefors Significance Correction

#### Ketentuan :

Sig >0,05 = Normal

### Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
nilai daya sebar	Based on Mean	.727	1	4	.442
	Based on Median	.250	1	4	.643
	Based on Median and with adjusted df	.250	1	3.200	.649
	Based on trimmed mean	.689	1	4	.453

#### Ketentuan :

Sig >0,05 = Homogen

## ANOVA

nilai daya sebar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.002	1	.002	.100	.768
Within Groups	.067	4	.017		
Total	.068	5			

**Ketentuan :**

Sig &gt;0,05 = Tidak Terdapat Perbedaan Signifikan

**Uji Paired T-Test F3****Paired Samples Test**

	Mean	Std. Deviation	Paired Differences			t	df	Sig. (2-tailed)
			Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Hari ke 0 - Hari ke 60	-.0333	.2309	.1333	-.6070	.5404	-.250	2	.826



## Analisis Statistik Stabilitas Fisik Viskositas

### Uji Normalitas dan Homogenitas F1

		Descriptives		Statistic	Std. Error
nilai viskositas	waktu hari ke 0	Mean		8640.00	122.882
		95% Confidence Interval for Mean	Lower Bound	8111.28	
			Upper Bound	9168.72	
		5% Trimmed Mean		.	
		Median		8680.00	
		Variance		45300.000	
		Std. Deviation		212.838	
		Minimum		8410	
		Maximum		8830	
		Range		420	
		Interquartile Range		.	
		Skewness		-.816	1.225
		Kurtosis		.	.
		hari ke 60	Mean		7713.33
	95% Confidence Interval for Mean		Lower Bound	6521.90	
			Upper Bound	8904.77	
	5% Trimmed Mean			.	
	Median			7790.00	
	Variance			230033.333	
	Std. Deviation			479.618	
Minimum			7200		
Maximum			8150		
Range			950		
Interquartile Range		.			
Skewness		-.701	1.225		
Kurtosis		.	.		

		Tests of Normality			Shapiro-Wilk		
		Kolmogorov-Smirnov <sup>a</sup>					
waktu		Statistic	df	Sig.	Statistic	df	Sig.
nilai	hari ke 0	.241	3	.	.974	3	.688
viskositas	hari ke 60	.230	3	.	.981	3	.735

a. Lilliefors Significance Correction

#### Ketentuan :

Sig >0,05 = Normal

#### Test of Homogeneity of Variances

		Levene	df	df2	Sig.
		Statistic	1		
nilai	Based on Mean	1.662	1	4	.267
viskositas	Based on Median	.877	1	4	.402
	Based on Median and with adjusted df	.877	1	2.794	.423
	Based on trimmed mean	1.605	1	4	.274

#### Ketentuan :

Sig >0,05 = Homogen

## ANOVA

nilai viskositas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1288066.667	1	1288066.667	9.356	.038
Within Groups	550666.667	4	137666.667		
Total	1838733.333	5			

**Ketentuan :**

Sig &gt;0,05 = Tidak Terdapat Perbedaan Signifikan

**Uji Paired T-Test F1**

		Paired Samples Test							
		Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper				
Pair 1	Hari ke 0 - Hari ke 60	46.667	35.119	20.276	-40.573	133.907	2.302	2	.148



## Uji Normalitas dan Homogenitas F2

		Descriptives		Statistic	Std. Error
nilai viskositas	waktu Hari ke 0	Mean		6866.67	78.811
		95% Confidence Interval for Mean	Lower Bound	6527.57	
			Upper Bound	7205.76	
		5% Trimmed Mean		.	
		Median		6930.00	
		Variance		18633.333	
		Std. Deviation		136.504	
		Minimum		6710	
		Maximum		6960	
		Range		250	
		Interquartile Range		.	
		Skewness		-1.638	1.225
		Kurtosis		.	.
	Hari ke 60	Mean		6623.33	39.299
		95% Confidence Interval for Mean	Lower Bound	6454.24	
			Upper Bound	6792.43	
		5% Trimmed Mean		.	
		Median		6600.00	
		Variance		4633.333	
		Std. Deviation		68.069	
		Minimum		6570	
		Maximum		6700	
		Range		130	
Interquartile Range		.			
Skewness		1.361	1.225		
Kurtosis		.	.		

		Tests of Normality			Shapiro-Wilk		
		Kolmogorov-Smirnov <sup>a</sup>					
waktu		Statistic	df	Sig.	Statistic	df	Sig.
nilai viskositas	Hari ke 0	.345	3	.	.839	3	.210
	Hari ke 60	.301	3	.	.912	3	.424

a. Lilliefors Significance Correction

### Ketentuan :

Sig >0,05 = Normal

### Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
nilai viskositas	Based on Mean	2.859	1	4	.166
	Based on Median	.285	1	4	.622
	Based on Median and with adjusted df	.285	1	2.716	.634
	Based on trimmed mean	2.414	1	4	.195

### Ketentuan :

Sig >0,05 = Homogen

## ANOVA

nilai viskositas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	88816.667	1	88816.667	7.635	.051
Within Groups	46533.333	4	11633.333		
Total	135350.000	5			

**Ketentuan :**

Sig &gt;0,05 = Tidak Terdapat Perbedaan Signifikan

**Uji Paired T-Test F2****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	Hari ke 0 - Hari ke 60	243.333	202.073	116.667	-258.643	745.309	2.086	2	.172



### Uji Normalitas dan Homogenitas F3

		Descriptives		Statistic	Std. Error	
nilai viskositas	waktu hari ke 0	Mean		790.00	15.275	
		95% Confidence Interval for Mean	Lower Bound	724.28		
			Upper Bound	855.72		
		5% Trimmed Mean		.		
		Median		780.00		
		Variance		700.000		
		Std. Deviation		26.458		
		Minimum		770		
		Maximum		820		
		Range		50		
		Interquartile Range		.		
		Skewness		1.458	1.225	
		Kurtosis		.	.	
			hari ke 60	Mean		743.33
		95% Confidence Interval for Mean		Lower Bound	680.82	
				Upper Bound	805.85	
		5% Trimmed Mean			.	
		Median			740.00	
		Variance			633.333	
		Std. Deviation			25.166	
		Minimum			720	
		Maximum			770	
		Range			50	
		Interquartile Range			.	
		Skewness			.586	1.225
		Kurtosis		.	.	

		Tests of Normality					
		Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	waktu	Statistic	df	Sig.	Statistic	df	Sig.
nilai viskositas	hari ke 0	.314	3	.	.893	3	.363
	hari ke 60	.219	3	.	.987	3	.780

a. Lilliefors Significance Correction

#### Ketentuan :

Sig >0,05 = Normal

		Test of Homogeneity of Variances			
		Levene Statistic	df1	df2	Sig.
nilai viskositas	Based on Mean	.057	1	4	.823
	Based on Median	.000	1	4	1.000
	Based on Median and with adjusted df	.000	1	3.670	1.000
	Based on trimmed mean	.048	1	4	.837

#### Ketentuan :

Sig >0,05 = Homogen

## ANOVA

nilai viskositas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3266.667	1	3266.667	4.900	.091
Within Groups	2666.667	4	666.667		
Total	5933.333	5			

**Ketentuan :**

Sig &gt;0,05 = Tidak Terdapat Perbedaan Signifikan







**Uji Paired T-Test F3**

Paired Samples Test									
Paired Differences									
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)	
				Lower	Upper				
Pair 1	Hari ke 0 - Hari ke 60	926.667	617.846	356.713	-608.147	2461.481	2.598	2	.122









### Lampiran 8 Dokumentasi Pengujian


#### 1. Dokumentasi Uji Ph

Formula	Sebelum	Sesudah
F1		
F2		
F3		

#### 2. Dokumentasi Uji Daya sebar

Formula	Sebelum	Sesudah
F1		
F2		
F3		

## 3. Dokumentasi Uji Viakositas

Formula	Sebelum	Sesudah
F1		
F2		
F3		



### Lampiran 9 Data Hasil Pengujian

#### 1. Data Hasil Pengujian pH

Formula	Hari ke-0	Hari ke-60
F1	5,66	5,56
	5,67	5,54
	5,65	5,52
F2	5,33	5,3
	5,32	5,28
	5,31	5,27
F3	4,95	4,72
	4,98	4,73
	4,96	4,74

#### 2. Data Hasil Pengujian Daya sebar

Formula	Hari ke-0	Hari ke-60
F1	3,20	3,30
	3,10	3,60
	3,30	3,20
F2	3,50	3,60
	3,60	3,50
	3,40	3,70
F3	4,60	4,50
	4,50	4,40
	4,40	4,70

#### 3. Data Hasil Pengujian Viskositas

Formula	Hari ke-0	Hari ke-60
F1	8410	8150
	8830	7790
	8680	7200
F2	6930	6570
	6960	6600
	6710	6700
F3	820	740
	770	720
	780	770

## Lampiran 10 Logbook Penelitian

**LAMPIRAN 16  
LOGBOOK PENELITIAN**

Nama Mahasiswa : Ainun Filzah Farhana  
 NIM : 2202050423  
 Judul Penelitian: Uji karakteristik dan stabilitas fisik deodoran krim yang mengandung tawar dengan variasi konsentrasi beeswax dan lemak tengkawang

No.	Tanggal	Kegiatan	Catatan/Uraian
1.	31/7/2024	Pengajuan judul KTI	diterima pemb-1.
2.	06/8/2024	Revisi judul KTI	ACC judul KTI
3.	9/8/2024	penyusunan Bab I	proses penyusunan Bab 1
4.	11/8/2024	Revisi Bab I	perbaiki
5.	16/8/2024	Revisi Bab I	perbaiki
6.	22/8/2024	Melanjutkan Bab 3	Konsultasi lanjutan
7.	31/8/2024	Revisi bab 1 dan 3	perbaiki
8.	05/9/2024	Revisi bab 3	perbaiki
9.	13/9/2024	penyusunan bab 2	Konsultasi
10.	23/9/2024	perbaiki bab 2	Revisi -
11.	25/9/2024	Revisi bab 2	perbaiki
12.	26/9/2024	Revisi bab 3 dan 2	perbaiki
13.	10/10/2024	Revisi bab I, II, III	perbaiki
14.	13/10/2024	Revisi bab II, III	perbaiki
15.	25/10/2024	Revisi bab I, II	perbaiki
16.	30/10/2024	Revisi bab I, II, III	perbaiki
17.	5/11/2024	Revisi bab I, II, III	ACC sempro

No.	Tanggal	Kegiatan	Catatan/Uraian
18.	13/11/2024	Ujian sempro/proposal	- Perbaikan
19.	14/11/2024	Revisi proposal	perbaikan
20.	18/11/2024	Revisi proposal	perbaikan
21.	22/11/2024	ACC proposal	lanjut penelitian
22.	25/11/2024	Mengurus surat izin penelitian	pengurusan izin penelitian
23.	26/11/2024	pengajuan surat izin penelitian	ACC surat izin
24.	1-10/12/2024	Membeli bahan yang diperlukan	Menunggu bahan
25.	12/12/2024	Membuat sediaan	Optimasi ke-1
26.	16/12/2024	Membuat sediaan	dikonultakan
27.	6/1/2025	Membuat sediaan	Optimasi ke-2
28.	13/1/2025	Membuat sediaan	dikonultakan
29.	20/1/2025	Membuat sediaan	Optimasi ke-3
30.	3/2/2025	Membuat sediaan + dikonultasikan	dikonultasikan
31.	10/2/2025	Membuat sediaan	Optimasi ke-4
32.	12/2/2025	Membuat sediaan	Optimasi ke-5
33.	14/2/2025	Membuat sediaan	dikonultasikan
34.	16/2/2025	Membuat sediaan	Optimasi ke-6
35.	18/2/2025	Membuat sediaan	Optimasi ke-7
36.	20/2/2025	Membuat sediaan	Sediaan final
37.	21/2/2025	Rekap data karakteristik	pengumpulan data H-O

No.	Tanggal	Kegiatan	Catatan/Uraian
28.	22 - 02 sampai 20 - 04 2025	Uji stabilitas	Menunggu uji stabilitas real time
37.	20/2025 /4	Rekap data stabilitas	pengumpulan data H-60
40.	25/2025 /4	penyusunan bab 4.	olah data <del>kepanan</del>
41.	27/2025 /4	penyusunan bab 4.	olah data statistik
42.	2/15 2025	penyusunan bab 4.	pembahasan
43.	5/15 2025	Revisi bab 4.	perbaikan
44.	14/16 2025	Revisi bab 4	perbaikan
45.	19/15 2025	Revisi bab 4 dan 5	perbaikan
46.	21/15 2025	persetujuan seminar hasil	ACC KTI
47.	28/15 2025	Sidang KTI	Revisi bab 4
48.	29/16 2025	Revisi bab 4 dan 5	perbaikan
49.	5/16 2025	Revisi bab 4 dan 5	perbaikan
50.	12/16 2025	ACC KTI + Pencetakan KTI	ACC KTI

*Lampiran II* Jadwal Penyusunan Karya Tulis Ilmiah

**JADWAL PENYUSUNAN KARYA TULIS ILMIAH (KTI)**

No.	Kegiatan	September				Oktober				November				Desember				Januari				Februari				Maret				April				Mei				Juni			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1.	Identifikasi Masalah	■	■																																						
2.	Penyusunan Proposal			■	■	■	■	■	■																																
3.	Pengumpulan Proposal									■	■	■	■																												
4.	Ujian Proposal													■	■	■	■																								
5.	Perbaikan Proposal																	■	■	■	■																				
6.	Pengurusan Izin Penelitian																					■	■	■	■																
7.	Pengumpulan Data																									■	■	■	■												
8.	Analisis Data																													■	■	■	■								
9.	Penyusunan Laporan																																	■	■	■	■				
10.	Ujian Sidang KTI																																								
11.	Perbaikan dan Pengadaan																																								
12.	Pengumpulan KTI																																								

Lamongan, 30 Juni 2025  
Penyusun,

**Ainun Filzah Fazliana**  
**NIM.22.02.05.0423**