

# LAMPIRAN

**Lampiran 1. Hasil determinasi tanaman seledri****LABORATORIUM BIOLOGI****FAKULTAS MIPA  
UNIVERSITAS AHMAD DAHLAN**

Jl. Prof. Dr. Soepomo, Yogyakarta Telp. (0274) 563515

**SURAT KETERANGAN**

Nomor : 005/Lab.Bio/B/1/2019

Yang bertanda tangan di bawah ini Kepala Laboratorium Biologi Universitas Ahmad Dahlan menerangkan bahwa :

Nama : Yusuf Rasyidi  
NIM : 20150350105  
Prodi, PT : Farmasi, Universitas Muhammadiyah Yogyakarta

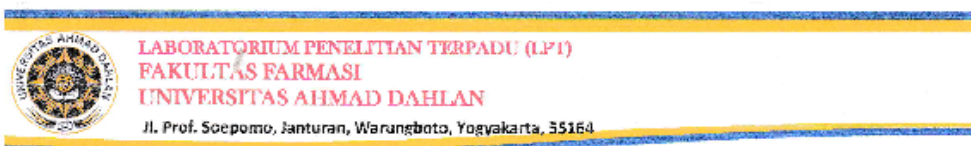
Telah melakukan determinasi tanaman dengan bimbingan Hery Setiyawan, M.Si di Laboratorium Biologi Universitas Ahmad Dahlan, pada tanggal 18 Januari 2019

Tanaman tersebut adalah :  
*Apium graveolens L.*

Demikian Surat Keterangan ini untuk dapat dipergunakan seperlunya.

Yogyakarta, 21 Januari 2019  
Kepala Laboratorium Biologi  
  
Drs. Hadi Susongko, M.Si.

## Lampiran 2. Hasil uji viskositas gel *hand sanitizer*



LPT-004-2017  
 Rev.01  
 Halaman 1 dari 1

**LAPORAN HASIL UJI**  
 No. Sertifikat : 02/LPT/VI/2019

**Informasi**

Identitas Sampel : Eks/19/06/02  
 Nama : Yusuf Rasyidi  
 Nama Sampel : Gel Ekstrak Seledri  
 Bentuk Sampel : Gel  
 Alamat : Universitas Muhammadiyah Yogyakarta

NAMA ALAT	: Rheosys Merlin VR II
METODE	:
Measuring System	: 25mm concentric cylinder
Parameter Summary	:
Start Speed	: 0.1 rpm
End Speed	: 100 rpm
Direction	: Up
Stops	: 10
Log/Lin	: Linear
Delay	: 30 secs
Integration	: 0.2 secs
Sifat Alir	: Non Newtonian
Nilai Parameter Viskositas	: terlampir

Yogyakarta, 19 Juni 2019  
 Kepala Laboratorium Penelitian



Dr. Nurkhasanah, M.Si., Apt.

**Perhatian**

1. LRU ini berlaku hanya pada sampel yang diujikan
2. LRU ini dibuat sama masa untuk penggunaan berikutnya yang disebutkan dalam LRU ini
3. LPT UAD tidak bertanggung jawab atas setiap kerugian, kerusakan atau tanggung jawab hukum yang diderita oleh pihak ketiga sebagai akibat dari keterlambatan terhadap atau penggunaan laporan ini
4. Tidak diperkenankan menyalin/maker LRU ini tanpa izin dari LPT UAD



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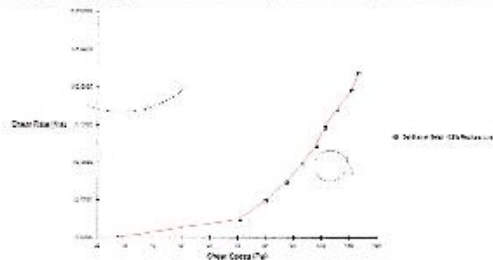
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#### Rheosys Tabular Printout

Start of Test : 6/13/2019 9:55:29 AM  
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 Test Heading : Gel Ekstrak Seledri 1%  
 Measuring System : 25mm Concentric Cylinders  
 Notes : R1  
 Parameter Summary :  
 Start Speed : 0.1  
 End Speed : 100  
 Direction : Up  
 Steps : 10  
 Log/Lin : Linear  
 Delay : 30 s  
 Integration : 0.2 s

Tabel 1. Tabel Pengujian Sampel Gel Ekstrak Seledri 1% Replikasi 1

Shear Rate (1/s)	Shear Stress (Pa)	Time (s)	RPM	Viscosity (Pa.s)	% Torque
0.109	26.657	30.2	0.1	244.55963	5.4
12.259	70.934	60.4	11.2	5.78628	14.4
24.408	80.053	90.6	22.3	3.27979	16.2
36.557	87.583	120.8	33.4	2.39579	17.7
48.707	93.189	151.0	44.5	1.91326	18.9
60.856	98.134	181.2	55.6	1.61256	19.9
73.005	101.459	211.4	66.7	1.38975	20.5
85.155	105.585	241.6	77.8	1.23992	21.4
97.304	110.841	271.8	88.9	1.13912	22.4
109.453	113.481	302.0	100.0	1.03680	23.0



Rheogram 1. Rheogram Pengujian Sampel Gel Ekstrak Seledri 1% Replikasi 1



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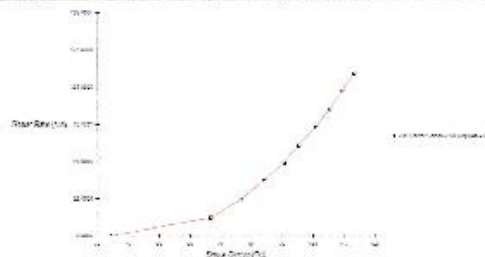
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#### Rheosys Tabular Printout

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 Measuring System : 25mm Concentric Cylinders  
 Notes : R2  
 Parameter Summary :  
 Start Speed : 0.1  
 End Speed : 100  
 Direction : Up  
 Steps : 10  
 Log/Lin : Linear  
 Delay : 30 s  
 Integration : 0.2 s

Tabel 2. Tabel Pengujian Sampel Gel Ekstrak Seledri 1% Replikasi 2

Shear Rate (1/s)	Shear Stress (Pa)	Time (s)	RPM	Viscosity (Pa.s)	% Torque
0.109	34.64	30.2	0.1	317.79816	7.0
12.259	66.674	60.4	11.2	5.43878	13.5
24.408	76.66	90.6	22.3	3.14077	15.5
36.557	84.015	120.8	33.4	2.29819	17.0
48.707	90.405	151.0	44.5	1.85610	18.3
60.856	95.376	181.2	55.6	1.56724	19.3
73.005	100.856	211.4	66.7	1.38149	20.4
85.155	105.631	241.6	77.8	1.24046	21.4
97.304	109.493	271.8	88.9	1.12527	22.2
109.453	113.383	302.0	100.0	1.03591	23.0



Rheogram 2. Rheogram Pengujian Sampel Gel Ekstrak Seledri 1% Replikasi 2



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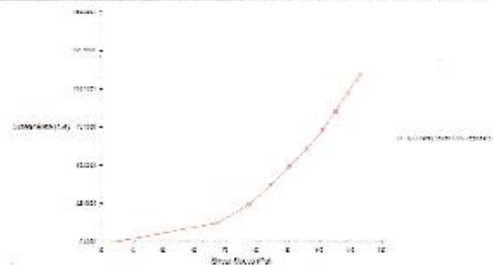
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#### Rheosys Tabular Printout

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 Test Heading : Gel Ekstrak Seledri 1%  
 Measuring System : 25mm Concentric Cylinders  
 Notes : R3  
 Parameter Summary :  
 Start Speed : 0.1  
 End Speed : 100  
 Direction : Up  
 Steps : 10  
 Log/Lin : Linear  
 Delay : 30 s  
 Integration : 0.2 s

Tabel 3. Tabel Pengujian Sampel Gel Ekstrak Seledri 1% Replikasi 3

Shear Rate (1/s)	Shear Stress (Pa)	Time (s)	RPM	Viscosity (Pa.s)	% Torque
0.109	34.991	30.2	0.1	321.01836	7.1
12.259	67.489	60.4	11.2	5.50526	13.7
24.408	77.786	90.6	22.3	3.18691	15.8
36.557	84.515	120.8	33.4	2.31187	17.1
48.707	90.508	151.0	44.5	1.85821	18.3
60.856	96.252	181.2	55.6	1.58164	19.5
73.005	101.426	211.4	66.7	1.38930	20.5
85.155	105.382	241.6	77.8	1.23753	21.3
97.304	109.45	271.8	88.9	1.12483	22.2
109.453	113.407	302.0	100.0	1.03613	23.0



Rheogram 3. Rheogram Pengujian Sampel Gel Ekstrak Seledri 1% Replikasi 3



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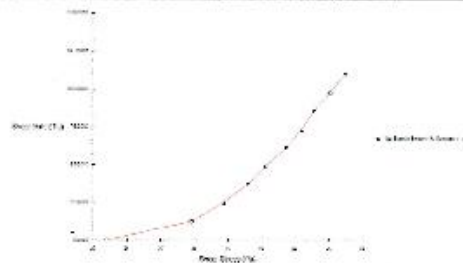
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#### Rheosys Tabular Printout

Start of Test : 6/13/2019 8:38:13 AM  
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 Test Heading : Gel Ekstrak Seledri 2%  
 Measuring System : 25mm Concentric Cylinders  
 Notes : R1  
 Parameter Summary :  
 Start Speed : 0.1  
 End Speed : 100  
 Direction : Up  
 Steps : 10  
 Log/Lin : Linear  
 Delay : 30 s  
 Inegration : 0.2 s

Tabel 1. Tabel Pengujian Sampel Gel Ekstrak Seledri 2% Replikasi 1

Shear Rate (1/s)	Shear Stress (Pa)	Time (s)	RPM	Viscosity (Pa.s)	% Torque
0.109	21.941	30.2	0.1	201.29358	4.4
12.259	34.596	60.4	11.2	2.82209	7.0
24.408	39.338	90.6	22.3	1.61168	8.0
36.557	43.033	120.8	33.4	1.17715	8.7
48.707	45.678	151.0	44.5	0.93781	9.2
60.856	48.706	181.2	55.6	0.80035	9.9
73.005	50.968	211.4	66.7	0.69814	10.3
85.155	52.907	241.6	77.8	0.62130	10.7
97.304	55.278	271.8	88.9	0.56810	11.2
109.453	57.401	302.0	100.0	0.52444	11.6



Rheogram 1. Rheogram Pengujian Sampel Gel Ekstrak Seledri 2% Replikasi 1



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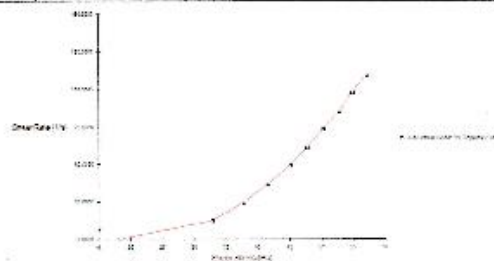
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#### Rheosys Tabular Printout

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 Test Heading : Gel Ekstrak Seledri 2%  
 Measuring System : 25mm Concentric Cylinders  
 Notes : R2  
 Parameter Summary :  
 Start Speed : 0.1  
 End Speed : 100  
 Direction : Up  
 Steps : 10  
 Log/Lin : Linear  
 Delay : 30 s  
 Integration : 0.2 s

Tabel 2. Tabel Pengujian Sampel Gel Ekstrak Seledri 2% Replikasi 2

Shear Rate (1/s)	Shear Stress (Pa)	Time (s)	RPM	Viscosity (Pa.s)	% Torque
0.109	18.243	30.2	0.1	167.36697	3.7
12.259	32.812	60.4	11.2	2.67656	6.6
24.408	37.797	90.6	22.3	1.54855	7.7
36.557	41.64	120.8	33.4	1.13904	8.4
48.707	45.085	151.0	44.5	0.92564	9.1
60.856	47.758	181.2	55.6	0.78477	9.7
73.005	50.267	211.4	66.7	0.68854	10.2
85.155	52.82	241.6	77.8	0.62028	10.7
97.304	54.862	271.8	88.9	0.56382	11.1
109.453	57.123	302.0	100.0	0.52190	11.6



Rheogram 2. Rheogram Pengujian Sampel Gel Ekstrak Seledri 2% Replikasi 2





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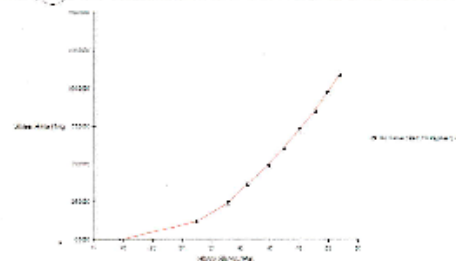
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#### Rheosys Tabular Printout

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 Test Heading : Gel Ekstrak Seledri 2%  
 Measuring System : 25mm Concentric Cylinders  
 Notes : R3  
 Parameter Summary :  
 Start Speed : 0.1  
 End Speed : 100  
 Direction : Up  
 Steps : 10  
 Log/Lin : Linear  
 Delay : 30 s  
 Integration : 0.2 s

Tabel 3. Tabel Pengujian Sampel Gel Ekstrak Seledri 2% Replikasi 3

Shear Rate (1/s)	Shear Stress (Pa)	Time (s)	RPM	Viscosity (Pa.s)	% Torque
0.109	19.613	30.2	0.1	179.93579	4.0
12.259	32.637	60.4	11.2	2.66229	6.6
24.408	37.918	90.6	22.3	1.55351	7.7
36.557	41.159	120.8	33.4	1.12589	8.3
48.707	44.591	151.0	44.5	0.91549	9.0
60.856	47.32	181.2	55.6	0.77757	9.6
73.005	50.079	211.4	66.7	0.68597	10.1
85.155	52.722	241.6	77.8	0.61913	10.7
97.304	54.864	271.8	88.9	0.56384	11.1
109.453	56.839	302.0	100.0	0.51930	11.5



Rheogram 3. Rheogram Pengujian Sampel Gel Ekstrak Seledri 2% Replikasi 3



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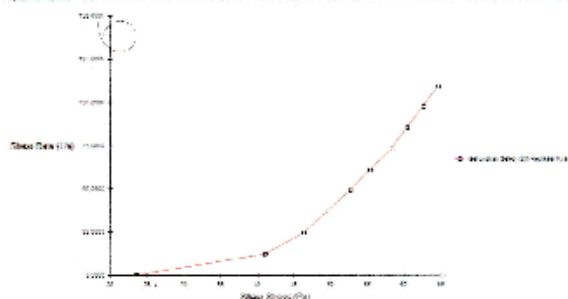
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#### Rheosys Tabular Printout

Start of Test : 6/13/2019 7:51:20 AM  
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Test Heading : Gel Ekstrak Seledri 4%  
Measuring System : 25mm Concentric Cylinders  
Notes : R1  
Parameter Summary :  
Start Speed : 0.1  
End Speed : 100  
Direction : Up  
Steps : 10  
Log/Lin : Linear  
Delay : 30 s  
Integration : 0.2 s

Tabel 1. Tabel Pengujian Sampel Gel Ekstrak Seledri 4% Replikasi 1

Shear Rate (1/s)	Shear Stress (Pa)	Time (s)	RPM	Viscosity (Pa.s)	% Torque
0.109	23.552	30.2	0.1	216.07339	4.8
12.259	41.081	60.4	11.2	3.35109	8.3
24.408	46.318	90.6	22.3	1.89766	9.4
36.557	49.549	120.8	33.4	1.35539	10.0
48.707	52.633	151.0	44.5	1.08060	10.7
60.856	55.405	181.2	55.6	0.91043	11.2
73.005	58.368	211.4	66.7	0.79951	11.8
85.155	60.402	241.6	77.8	0.70832	12.2
97.304	62.609	271.8	88.9	0.64344	12.7
109.453	64.704	302.0	100.0	0.59116	13.1



Rheogram 1. Rheogram Pengujian Sampel Gel Ekstrak Seledri 4% Replikasi 1

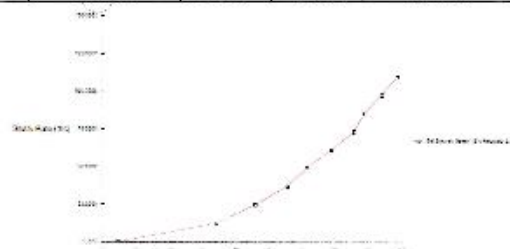


#### Rheosys Tabular Printout

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 Test Heading : Gel Ekstrak Seledri 4%  
 Measuring System : 25mm Concentric Cylinders  
 Notes : R2  
 Parameter Summary :  
 Start Speed : 0.1  
 End Speed : 100  
 Direction : Up  
 Steps : 10  
 Log/Lin : Linear  
 Delay : 30 s  
 Integration : 0.2 s

Tabel 2. Tabel Pengujian Sampel Gel Ekstrak Seledri 4% Replikasi 2

Shear Rate (1/s)	Shear Stress (Pa)	Time (s)	RPM	Viscosity (Pa.s)	% Torque
0.109	22.237	30.2	0.1	204.00917	4.5
12.259	37.115	60.4	11.2	3.02757	7.5
24.408	42.963	90.6	22.3	1.76020	8.7
36.557	47.764	120.8	33.4	1.30656	9.7
48.707	50.728	151.0	44.5	1.04149	10.3
60.856	54.475	181.2	55.6	0.89515	11.0
73.005	57.883	211.4	66.7	0.79286	11.7
85.155	59.55	241.6	77.8	0.69931	12.1
97.304	61.994	271.8	88.9	0.63712	12.6
109.453	64.402	302.0	100.0	0.58840	13.0





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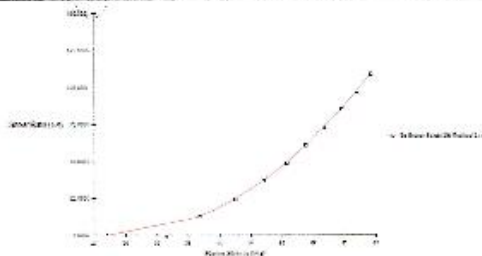
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#### Rheosys Tabular Printout

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 Test Heading : Gel Ekstrak Seledri 4%  
 Measuring System : 25mm Concentric Cylinders  
 Notes : R3  
 Parameter Summary :  
 Start Speed : 0.1  
 End Speed : 100  
 Direction : Up  
 Steps : 10  
 Log/Lin : Linear  
 Delay : 30 s  
 Integration : 0.2 s

Tabel 3. Tabel Pengujian Sampel Gel Ekstrak Seledri 4% Replikasi 3

Shear Rate (1/s)	Shear Stress (Pa)	Time (s)	RPM	Viscosity (Pa.s)	% Torque
0.109	22.225	30.2	0.1	203.89909	4.5
12.259	36.819	60.4	11.2	3.00343	7.5
24.408	42.517	90.6	22.3	1.74193	8.6
36.557	47.042	120.8	33.4	1.28681	9.5
48.707	50.728	151.0	44.5	1.04149	10.3
60.856	53.765	181.2	55.6	0.88348	10.9
73.005	56.704	211.4	66.7	0.77671	11.5
85.155	59.543	241.6	77.8	0.69923	12.1
97.304	61.926	271.8	88.9	0.63642	12.5
109.453	64.143	302.0	100.0	0.58603	13.0



Rheogram 3. Rheogram Pengujian Sampel Gel Ekstrak Seledri 4% Replikasi 3

### Lampiran 3. Dokumentasi



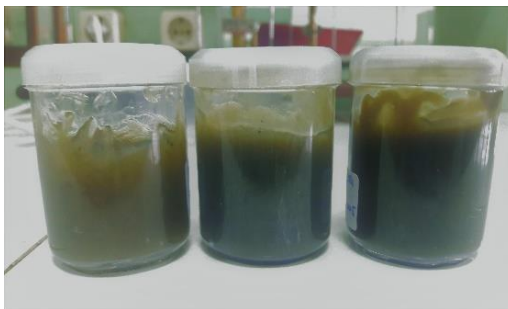
Gambar 1. Proses maserasi dan remaserasi dilanjutkan penyaringan menggunakan vacuum buhner



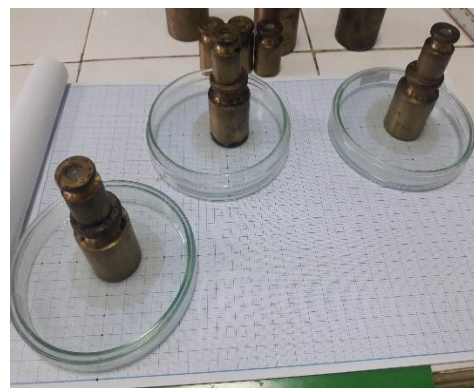
Gambar 2. Filtrat hasil meserasi dan remaserasi



Gambar 3. Proses pengentalan ekstrak menggunakan *rotary evaporator* dan *waterbath*



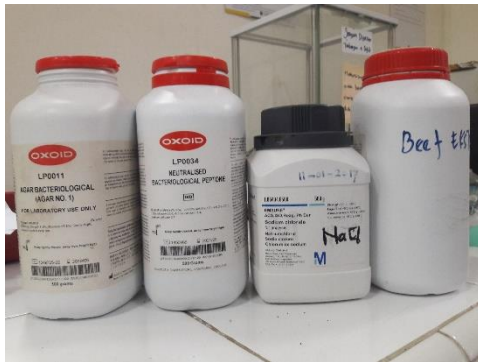
Gambar 4. Sediaan gel *hand sanitizer*



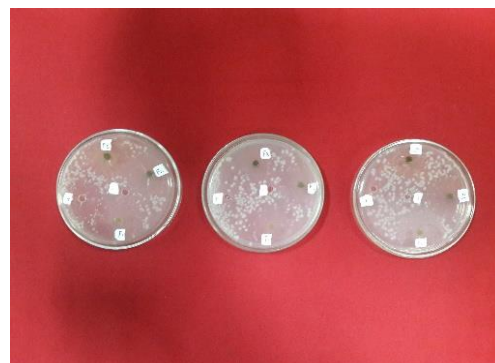
Gambar 5 . Evaluasi sediaan gel *hand sanitizer* meliputi daya sebar, daya rekat, pH dan viskositas



Gambar 6. Proses sterilisasi alat menggunakan autoklaf



Gambar 7. Pembuatan media Nutrient Agar (NA)



Gambar 8. Uji antibakteri *Escherichia coli* pada *Laminar Air Flow* (LAF)

#### Lampiran 4. Analisis uji statistik *one way* ANOVA

		Tests of Normality					
		Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	FORMULA	Statistic	df	Sig.	Statistic	df	Sig.
DAYA_HAMBAT	FORMULA 1	,314	3	.	,893	3	,363
	FORMULA 2	,267	3	.	,951	3	,576
	FORMULA 3	,201	3	.	,994	3	,856

a. Lilliefors Significance Correction

Gambar 9. Hasil uji tes normalitas

		Test of Homogeneity of Variances			
		Levene Statistic	df1	df2	Sig.
DAYA_HAMBAT	Based on Mean	,106	2	6	,901
	Based on Median	,006	2	6	,994
	Based on Median and with adjusted df	,006	2	5,323	,994
	Based on trimmed mean	,093	2	6	,912

Gambar 10. Hasil uji tes homogenitas

ANOVA					
DAYA_HAMBAT					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	33,020	2	16,510	11,081	,010
Within Groups	8,940	6	1,490		
Total	41,960	8			

Gambar 11 . Hasil uji *one way* ANOVA



### Multiple Comparisons

Dependent Variable: DAYA\_HAMBAT

Tamhane

(I) FORMULA	(J) FORMULA	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
		(I-J)			Lower Bound	Upper Bound
FORMULA 1	FORMULA 2	1,50000	1,02307	,521	-2,5625	5,5625
	FORMULA 3	4,60000*	1,01325	,033	,5637	8,6363
FORMULA 2	FORMULA 1	-1,50000	1,02307	,521	-5,5625	2,5625
	FORMULA 3	3,10000	,95219	,091	-,6532	6,8532
FORMULA 3	FORMULA 1	-4,60000*	1,01325	,033	-8,6363	-,5637
	FORMULA 2	-3,10000	,95219	,091	-6,8532	,6532

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

Gambar 12. Hasil uji post Hoc *Tamhane's T2*