

Lampiran 1

HASIL ANALISIS DENGAN SPSS

Tests of Normality

	Formula	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Waktu_kadaluwarsa	Formula 1	.314	3	.	.893	3	.363
	Formula 2	.219	3	.	.987	3	.780
	Formula 3	.314	3	.	.893	3	.363

a. Lilliefors Significance Correction

Descriptives

Waktu_kadaluwarsa

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Formula 1	3	1.30000E1	2.645751	1.527525	6.42759	19.57241	10.000	15.000
Formula 2	3	2.06667E1	2.516611	1.452966	14.41506	26.91828	18.000	23.000
Formula 3	3	2.30000E1	2.645751	1.527525	16.42759	29.57241	21.000	26.000
Total	9	1.88889E1	5.060742	1.686914	14.99886	22.77892	10.000	26.000

Test of Homogeneity of Variances

Waktu_kadaluwarsa

Levene Statistic	df1	df2	Sig.
.041	2	6	.960

ANOVA

Waktu_kadaluwarsa

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	164.222	2	82.111	12.115	.008
Within Groups	40.667	6	6.778		
Total	204.889	8			

Lampiran 1 (lanjutan)

Multiple Comparisons

Waktu_kadaluwarsa

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 1	Formula 2	-7.666667*	2.125681	.026	-14.18884	-1.14449
	Formula 3	-10.000000*	2.125681	.008	-16.52217	-3.47783
Formula 2	Formula 1	7.666667*	2.125681	.026	1.14449	14.18884
	Formula 3	-2.333333	2.125681	.550	-8.85551	4.18884
Formula 3	Formula 1	10.000000*	2.125681	.008	3.47783	16.52217
	Formula 2	2.333333	2.125681	.550	-4.18884	8.85551

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

Lampiran 2

DATA HASIL UJI SIFAT FISIK GRANUL

1. KandunganLembabGranul (%)

a. Formula I

Replikasi	KandunganLembab(%)
I	1,41
II	1,21
III	1,39
X	1,34
SD	0,11

b. Formula II

Replikasi	KandunganLembab (%)
I	0,99
II	0,80
III	1,00
X	0,93
SD	0,11

c. Formula III

Replikasi	KandunganLembab (%)
I	1,12
II	1,76
III	1,21
X	1,36
SD	0,35

Lampiran2 (lanjutan)

2. Uji Waktu Alir

a. Formula I

Replikasi	Berat Granul (g)	Waktu Alir (detik)
I	100	6,94
II	100	6,82
III	100	6,81
X		6,86
SD		0,07

b. Formula II

Replikasi	Berat Granul (g)	Waktu Alir (detik)
I	100	7,59
II	100	7,88
III	100	7,60
X		7,69
SD		0,16

c. Formula III

Replikasi	Berat Granul (g)	Waktu Alir (detik)
I	100	5,86
II	100	5,82
III	100	6,03
X		5,90
SD		0,11

3. Uji Sudut Diam

a. Formula I

Replikasi	Tinggi (cm)	Jari-jari (cm)	$\tan \alpha$	Sudut Diam ($^{\circ}$)
I	4,5	7,25	0,62	31,83
II	4,4	7,25	0,61	31,25
III	4,6	7,50	0,61	31,52
X	4,5	7,33	0,61	31,53
SD	0,1	0,14	0,007	0,29

Lampiran2 (lanjutan)

b. Formula II

Replikasi	Tinggi (cm)	Jari-jari (cm)	$\tan \alpha$	SudutDiam ($^{\circ}$)
I	4,3	7,50	0,57	29,83
II	4,2	7,00	0,60	30,96
III	4,4	7,00	0,63	32,15
X			0,60	30,98
SD			0,03	1,16

c. Formula III

Replikasi	Tinggi (cm)	Jari-jari (cm)	$\tan \alpha$	SudutDiam ($^{\circ}$)
I	4,1	7,00	0,59	30,36
II	4,1	6,75	0,61	31,28
III	4,1	7,00	0,59	30,36
Rata-rata	4,1	6,92	0,59	30,66
SD		0,14	0,01	0,53

4. UjiPenetapan

Replikasi	Formula I	Formula II	Formula III
I	9%	8%	9%
II	8%	8%	10%
III	8%	7%	10%
X	8,33	7,67	9,67
SD	0,58	0,56	0,58

Lampiran 3

DATA HASIL UJI SIFAT FISIK TABLET

1. Keseragaman Bobot

a. Formula I

No.	Bobot (mg)	No.	Bobot (mg)
1	645	11	648
2	653	12	646
3	640	13	648
4	657	14	655
5	654	15	652
6	643	16	651
7	645	17	646
8	643	18	648
9	651	19	646
10	646	20	655
X	649,50		
SD	3,54		
CV	0,54		

b. Formula II

No.	Bobot (mg)	No.	Bobot (mg)
1	662	11	666
2	662	12	652
3	656	13	659
4	646	14	645
5	637	15	656
6	641	16	655
7	659	17	670
8	655	18	660
9	648	19	659
10	662	20	660
X	658,20		
SD	6,96		
CV	1,06		

Lampiran 3 (lanjutan)

c. Formula III

No.	Bobot (mg)	No.	Bobot (mg)
1	657	11	649
2	663	12	655
3	658	13	660
4	648	14	659
5	667	15	664
6	659	16	658
7	655	17	647
8	657	18	664
9	663	19	654
10	668	20	644
X	655,40		
SD	6,93		
CV	1,06		

2. Ketebalanan Diameter Tablet

a. Formula I

No.	Diameter (mm)	No.	Ketebalan (mm)
1	13,13	1	4,35
2	13,10	2	4,39
3	13,08	3	4,39
4	13,07	4	4,43
5	13,06	5	4,4
6	13,04	6	4,35
7	13,13	7	4,36
8	13,09	8	4,35
9	13,09	9	4,37
10	13,10	10	4,38
X	13,09	4,38	
SD	0,03	0,03	

Lampiran 3 (lanjutan)

b. Formula II

No.	Diameter (mm)	No.	Ketebalan (mm)
1	13,09	1	4,37
2	13,06	2	4,36
3	13,06	3	4,46
4	13,04	4	4,38
5	13,03	5	4,40
6	13,08	6	4,39
7	13,03	7	4,40
8	13,01	8	4,37
9	13,05	9	4,40
10	13,03	10	4,43
X	13,05	4,39	
SD	0,03	0,03	
CV	0,191%	0,00069%	

c. Formula III

No.	Diameter (mm)	No.	Ketebalan (mm)
1	13,1	1	4,46
2	13,07	2	4,42
3	13,12	3	4,40
4	13,10	4	4,44
5	13,08	5	4,37
6	13,08	6	4,44
7	13,09	7	4,45
8	13,09	8	4,44
9	13,08	9	4,44
10	13,08	10	4,43
X	13,09	4,43	
SD	0,01	0,03	

Lampiran3 (lanjutan)

3. Kekerasan Tablet

a. Formula I

No.	Kekerasan (Kg)	No.	Kekerasan (Kg)
1	5,5	6	5,7
2	5,8	7	5,6
3	4,6	8	5,5
4	6,3	9	5,1
5	4,9	10	5,6
X	5,5		
SD	0,5		

b. Formula II

No.	Kekerasan (Kg)	No.	Kekerasan (Kg)
1	5,1	6	6,3
2	5,4	7	5,0
3	5,3	8	6,8
4	5,5	9	5,0
5	4,5	10	5,1
X	5,4		
SD	0,7		

c. Formula III

No.	Kekerasan (Kg)	No.	Kekerasan (Kg)
1	6,9	6	6,1
2	5,3	7	5,0
3	7,0	8	5,4
4	4,8	9	5,1
5	4,9	10	4,8
X	5.54		
SD	0.86		

Lampiran 3 (lanjutan)

4. Kerapuhan Tablet

a. Formula I

Replikasi	Berat Tablet Awal (g)	Berat Tablet akhir (g)	Kerapuhan (%)
I	12,93	12,87	0,45
II	12,95	12,89	0,47
III	12,78	12,69	0,64
X			0,52
SD			0,11

b. Formula II

Replikasi	Berat Tablet Awal (g)	Berat Tablet akhir (g)	Kerapuhan (%)
I	13,01	12,96	0,39
II	12,95	12,92	0,19
III	12,95	12,91	0,35
X			0,31
SD			0,11

c. Formula III

Replikasi	Berat Tablet Awal (g)	Berat Tablet akhir (g)	Kerapuhan (%)
I	13,01	13,00	0,10
II	13,14	13,09	0,40
III	13,19	13,13	0,51
Rata-rata			0,34
SD			0,21

5. WaktuHancur Tablet

a. Formula I

Replikasi	WaktuHancur
I	2 menit 15 detik
II	3 menit 12 detik
III	2 menit 35 detik
X	2 menit 54 detik
SD	0,51

Lampiran 3 (lanjutan)

b. Formula II

Replikasi	WaktuHancur
I	2 menit 4 detik
II	2 menit 10 detik
III	1 menit 44 detik
X	2menit 38 detik
SD	0,49

c. Formula III

Replikasi	WaktuHancur
I	0 menit 25 detik
II	0 menit 50 detik
III	1 menit 45 detik
X	1 menit 13 detik
SD	0,63

Lampiran 4

Hasilperhitungankadarparasetamoldalamsediaan tablet
parasetamoldengankadarampastahu 4%

Replikasi 1

Suhu	t (menit)	A	X (mcg/ml)	Ct (mcg/ml)	Log Ct	1/Ct (ml/mcg)
40°	0	0,221	3,29	3293,23	3,52	$0,30 \times 10^{-3}$
	15	0,268	3,88	3882,21	3,59	$0,26 \times 10^{-3}$
	30	0,284	4,08	4082,71	3,61	$0,24 \times 10^{-3}$
	45	0,305	4,35	4345,86	3,64	$0,23 \times 10^{-3}$
	60	0,221	3,29	3293,23	3,52	$0,30 \times 10^{-3}$
	75	0,230	3,41	3406,02	3,53	$0,29 \times 10^{-3}$
55°	0	0,272	3,93	3932,33	3,59	$0,25 \times 10^{-3}$
	15	0,246	3,61	3606,52	3,56	$0,28 \times 10^{-3}$
	30	0,299	4,27	4270,68	3,63	$0,23 \times 10^{-3}$
	45	0,342	4,81	4809,52	3,68	$0,21 \times 10^{-3}$
	60	0,301	4,30	4295,74	3,63	$0,23 \times 10^{-3}$
	75	0,307	4,37	4370,93	3,64	$0,23 \times 10^{-3}$
70°	0	0,318	4,51	4508,77	3,65	$0,22 \times 10^{-3}$
	15	0,315	4,47	4471,18	3,65	$0,22 \times 10^{-3}$
	30	0,341	4,80	4796,99	3,68	$0,21 \times 10^{-3}$
	45	0,365	5,10	5097,74	3,71	$0,20 \times 10^{-3}$
	60	0,366	5,11	5110,28	3,71	$0,20 \times 10^{-3}$
	75	0,355	4,97	4972,43	3,70	$0,20 \times 10^{-3}$

Persamaan garis yang terbentuk adalah:

Suhu	Orde	Persamaan garis	r
40°	0	$y = -26,85x + 3811$	$1,10 \times 10^{-1}$
	1	$y = -0,003x + 3,58$	$1,13 \times 10^{-1}$
	2	$y = (2 \times 10^{-6})x + 0,00$	$1,14 \times 10^{-1}$
55°	0	$y = 137,10x + 3734$	0,63
	1	$y = 0,014x + 3,572$	0,65
	2	$y = (-8 \times 10^{-6})x + 0,026$	0,63
70°	0	$y = 129,60x + 4372$	0,85
	1	$y = 0,01x + 3,64$	0,86
	2	$y = (-6 \times 10^{-6})x + 0,00$	0,85

Lampiran 4 (lanjutan)

Harga k

T (°C)	T (°K)	1/T (1/K)	K	Log k
40	313	$3,195 \times 10^{-3}$	$-6,91 \times 10^{-3}$	-2,16
55	328	$3,049 \times 10^{-3}$	$-3,00 \times 10^{-3}$	-2,52
70	343	$2,915 \times 10^{-3}$	$-4,10 \times 10^{-3}$	-2,39

Persamaan garis Regresi Linier 1/T vs Log k

$$A = -4,94; b = 845,91$$

$$Y = 845,91X - 4,94$$

K pada suhu 25°C:

$$K = Ae^{-E_a/RT}$$

$$\text{Log } k = -E_a/2.303RT \cdot 1/T + \text{Log } A$$

$$Y = Bx \pm A$$

$$\text{Log } k_{25} = (845,91 \cdot 1/298) - 4,94$$

$$\text{Log } k_{25} = -3,63$$

$$K_{25} = 2,344 \times 10^{-7} \text{ menit}^{-1}$$

Waktu kadaluwarsa (t_{90}):

$$T_{90} = 0,105/k$$

$$T_{90} = 0,105/(2,344 \times 10^{-7}) = 447.908,495 \text{ menit}$$

$$= 10,368 \text{ bulan}$$

$$= 10 \text{ bulan } 11 \text{ hari}$$

Lampiran 4 (lanjutan)

Replikasi 2

Suhu	Waktu (menit)	A	χ	Ct	Log Ct	1/Ct
40°	0	0,221	3,29	3293,23	3,52	$0,30 \times 10^{-3}$
	15	0,216	3,23	3230,58	3,51	$0,31 \times 10^{-3}$
	30	0,243	3,57	3568,92	3,55	$0,28 \times 10^{-3}$
	45	0,331	4,67	4671,68	3,67	$0,21 \times 10^{-3}$
	60	0,320	4,53	4533,83	3,66	$0,22 \times 10^{-3}$
	75	0,396	5,49	5486,22	3,74	$0,18 \times 10^{-3}$
55°	0	0,328	4,63	4634,09	3,67	$0,22 \times 10^{-3}$
	15	0,221	3,29	3293,23	3,52	$0,30 \times 10^{-3}$
	30	0,401	5,55	5548,87	3,74	$0,18 \times 10^{-3}$
	45	0,358	5,01	5010,03	3,70	$0,20 \times 10^{-3}$
	60	0,380	5,28	5285,71	3,72	$0,19 \times 10^{-3}$
	75	0,319	4,52	4521,30	3,66	$0,22 \times 10^{-3}$
70°	0	0,245	3,59	3593,98	3,56	$0,28 \times 10^{-3}$
	15	0,253	3,69	3694,24	3,57	$0,27 \times 10^{-3}$
	30	0,225	3,34	3343,36	3,52	$0,30 \times 10^{-3}$
	45	0,236	3,48	3481,20	3,54	$0,29 \times 10^{-3}$
	60	0,253	3,69	3694,24	3,57	$0,27 \times 10^{-3}$
	75	0,265	3,84	384,61	3,58	$0,26 \times 10^{-3}$

Persamaan garis untuk masing-masing orde reaksi :

Suhu	Orde	Persamaan garis	r
40	0	$y = (-3 \times 10^{-5})x + 0,00$	0,94
	1	$y = 0,05x + 3,44$	0,95
	2	$y = (-3 \times 10^{-5})x + 0,00$	0,94
55	0	$y = 139,2x + 4228$	0,33
	1	$y = 0,01x + 3,61$	0,36
	2	$y = (-8 \times 10^{-6})x + 0,00$	0,34
70	0	$y = 39,74x + 3469$	0,41
	1	$y = 0,004x + 3,54$	0,42
	2	$y = -(3 \times 10^{-6})x + 0,00$	0,39

Lampiran 4 (lanjutan)

Harga k padamasing-masing suhu:

T (°C)	T (°K)	1/T (1/K)	K	Log k
40	313	$3,195 \times 10^{-3}$	-0,11	-0,96
55	328	$3,049 \times 10^{-3}$	-0,02	-1,69
70	343	$2,915 \times 10^{-3}$	-0,009	-2,05

Persamaan garis Regresi Linear 1/T vs Log k

$$A = -5,592 ; b = 1098,868$$

$$Y = 1098,868X - 4,592$$

K pada suhu 25°C:

$$K = Ae^{-Ea/RT}$$

$$\text{Log } k = -Ea/2.303RT \cdot 1/T + \text{Log } A$$

$$Y = BX \pm A$$

$$\text{Log } k_{25} = (1098,868 \cdot 1/298) - 5,592$$

$$\text{Log } k_{25} = -3,808$$

$$K_{25} = 1,556 \times 10^{-7} \text{ menit}^{-1}$$

Waktu kadaluwarsa (t_{90}):

$$T_{90} = 0,105/k$$

$$T_{90} = 0,105/(1,556 \times 10^{-7}) = 674.822,03 \text{ menit}$$

$$= 1,302 \text{ tahun}$$

$$= 1 \text{ tahun } 3 \text{ bulan}$$

Lampiran 4 (lanjutan)

Replikasi 3

Suhu	Waktu (menit)	Absorbansi	X (mcg/ml)	Ct (mcg/ml)	Log Ct	1/Ct (ml/mcg)
40°	0	0,341	4,80	4796,99	3,68	$0,21 \times 10^{-3}$
	15	0,387	5,37	5373,43	3,73	$0,19 \times 10^{-3}$
	30	0,396	5,49	5486,22	3,74	$0,18 \times 10^{-3}$
	45	0,389	5,40	5398,49	3,73	$0,19 \times 10^{-3}$
	60	0,388	5,39	5385,96	3,73	$0,19 \times 10^{-3}$
	75	0,386	5,36	5360,90	3,73	$0,19 \times 10^{-3}$
55°	0	0,298	4,26	4258,14	3,63	$0,23 \times 10^{-3}$
	15	0,254	3,71	3706,77	3,57	$0,27 \times 10^{-3}$
	30	0,367	5,12	5122,81	3,71	$0,20 \times 10^{-3}$
	45	0,362	5,06	5060,15	3,70	$0,20 \times 10^{-3}$
	60	0,360	5,03	5035,09	3,70	$0,20 \times 10^{-3}$
	75	0,324	4,58	4583,96	3,66	$0,22 \times 10^{-3}$
70°	0	0,337	4,75	4746,87	3,68	$0,21 \times 10^{-3}$
	15	0,349	4,89	4897,24	3,69	$0,20 \times 10^{-3}$
	30	0,331	4,67	4671,68	3,67	$0,21 \times 10^{-3}$
	45	0,381	5,29	5298,25	3,72	$0,19 \times 10^{-3}$
	60	0,432	5,94	5937,34	3,77	$0,17 \times 10^{-3}$
	75	0,396	5,49	5486,22	3,74	$0,18 \times 10^{-3}$

Persamaan garis untuk masing-masing orde reaksi:

Suhu	Orde	Persamaan Garis	R
40	0	$y = 79,12x + 5023$	0,591
	1	$y = 0,006x + 3,70$	0,599
	2	$y = -3 \times 10^{-6}x + 0,00$	0,595
55	0	$y = 158,60x + 4072$	0,526
	1	$y = 0,015x + 3,61$	0,538
	2	$y = -8 \times 10^{-6}x + 0,00$	0,534
70	0	$y = 212,6x + 4428$	0,809
	1	$y = 0,017x + 3,65$	0,820
	2	$y = -8 \times 10^{-6} + 0,00$	0,815

Lampiran 4 (lanjutan)

Harga k padamasing-masing suhu:

T (°C)	T (°K)	1/T (1/K)	K	Log k
40	313	$3,195 \times 10^{-3}$	0,014	-1,86
55	328	$3,049 \times 10^{-3}$	0,034	-1,46
70	343	$2,915 \times 10^{-3}$	0,039	-1,41

Persamaan garis Regresi Linier 1/T vs Log k

$$A = -1,164 ; b = -88,517$$

$$Y = -88,517X - 1,164$$

K pada suhu 25°C:

$$K = Ae^{-Ea/RT}$$

$$\text{Log } k = -Ea/2.303RT \cdot 1/T + \text{Log } A$$

$$Y = BX \pm A$$

$$\text{Log } k_{25} = (-88,517 \cdot 1/298) - 1,164$$

$$\text{Log } k_{25} = -3,9984$$

$$K_{25} = 1,0037 \times 10^{-7} \text{ menit}^{-1}$$

Waktu kadaluwarsa (t_{90}):

$$T_{90} = 0,105/k$$

$$T_{90} = 0,105/(1,0037 \times 10^{-7}) = 7.257.600 \text{ menit}$$

$$= 1 \text{ tahun } 2 \text{ bulan}$$

Lampiran 4 (lanjutan)

Hasil perhitungan kadar parasetamol dalam tablet dengan kadar ampas tahu 5%

Replikasi 1

Suhu	Waktu (Menit)	A	X (mcg/ml)	Ct (mcg/ml)	Log Ct	1/Ct (ml/mcg)
40°	0	0,25	3,67	3669,17	3,56	$0,27 \times 10^{-3}$
	15	0,33	4,67	4671,68	3,67	$0,21 \times 10^{-3}$
	30	0,36	4,98	4984,96	3,70	$0,20 \times 10^{-3}$
	45	0,40	5,51	5511,28	3,74	$0,18 \times 10^{-3}$
	60	0,40	5,57	5573,93	3,75	$0,18 \times 10^{-3}$
	75	0,35	4,91	4909,77	3,69	$0,20 \times 10^{-3}$
55°	0	0,37	5,14	5135,34	3,71	$0,19 \times 10^{-3}$
	15	0,35	4,92	4922,31	3,69	$0,20 \times 10^{-3}$
	30	0,36	5,04	5035,09	3,70	$0,20 \times 10^{-3}$
	45	0,51	6,91	6914,79	3,84	$0,14 \times 10^{-3}$
	60	0,36	5,05	5047,62	3,70	$0,20 \times 10^{-3}$
	75	0,32	4,57	4571,43	3,66	$0,22 \times 10^{-3}$
70°	0	0,33	4,68	4684,21	3,67	$0,21 \times 10^{-3}$
	15	0,34	4,80	4796,99	3,68	$0,21 \times 10^{-3}$
	30	0,38	5,22	5223,06	3,72	$0,19 \times 10^{-3}$
	45	0,40	5,50	5498,75	3,74	$0,18 \times 10^{-3}$
	60	0,42	5,80	5799,50	3,76	$0,17 \times 10^{-3}$
	75	0,46	6,30	6300,75	3,80	$0,16 \times 10^{-3}$

Persamaan garis tiap orde reaksi :

Suhu	Orde	Persamaan garis	r
40°	0	$y = 269,60x + 3943$	0,727
	1	$y = 0,025x + 3,594$	0,733
	2	$y = -0,00001x + 0,00$	0,732
55°	0	$y = -16,11x + 5327$	0,032
	1	$y = -0,002x + 3,726$	0,105
	2	$y = 0,000001x + 0,00$	0,070
70°	0	$y = 324,70x + 4247$	0,989
	1	$y = 0,026x + 3,637$	0,993
	2	$y = -0,00001x + 0,00$	0,992

Lampiran 4 (lanjutan)

Harga k pada berbagai suhu:

T (°C)	T (°K)	1/T (1/K)	K	Log k
40	313	$3,195 \times 10^{-3}$	0,0576	-1,240
55	328	$3,049 \times 10^{-3}$	0,0046	-2,337
70	343	$2,915 \times 10^{-3}$	0,0598	-1,223

Persamaan garis Regresi Linier 1/T vs Log k

$$A = -1,759 ; b = 52,060$$

$$Y = 52,060X - 1,759$$

K pada suhu 25°C:

$$K = Ae^{-E_a/RT}$$

$$\text{Log } k = -E_a/2.303RT \cdot 1/T + \text{Log } A$$

$$Y = BX \pm A$$

$$\text{Log } k_{25} = (52,060 \cdot 1/298) - 1,759$$

$$\text{Log } k_{25} = -3,96$$

$$K_{25} = 1,096 \times 10^{-7} \text{ menit}^{-1}$$

Waktu kadaluwarsa (t_{90}):

$$T_{90} = 0,105/k$$

$$T_{90} = 0,105/(1,096 \times 10^{-7}) = 957.611,3813 \text{ menit}$$

$$= 1 \text{ tahun } 9 \text{ bulan}$$

Lampiran 4 (lanjutan)

Replikasi 2

Suhu	Waktu (menit)	Absorbansi	X (mcg/ml)	Ct (mcg/ml)	Log Ct	1/Ct (ml/mcg)
40°	0	0,309	4,40	4395,99	3,64	$0,23 \times 10^{-3}$
	15	0,349	4,90	4897,24	3,69	$0,20 \times 10^{-3}$
	30	0,327	4,62	4621,55	3,66	$0,22 \times 10^{-3}$
	45	0,402	5,56	5561,40	3,75	$0,18 \times 10^{-3}$
	60	0,364	5,09	5085,21	3,71	$0,20 \times 10^{-3}$
	75	0,421	5,80	5799,50	3,76	$0,17 \times 10^{-3}$
55°	0	0,359	5,02	5022,56	3,70	$0,20 \times 10^{-3}$
	15	0,365	5,10	5097,74	3,71	$0,20 \times 10^{-3}$
	30	0,388	5,39	5385,96	3,73	$0,19 \times 10^{-3}$
	45	0,352	4,93	4934,84	3,69	$0,20 \times 10^{-3}$
	60	0,373	5,20	5197,99	3,72	$0,19 \times 10^{-3}$
	75	0,334	4,71	4709,27	3,67	$0,21 \times 10^{-3}$
70°	0	0,313	4,45	4446,12	3,65	$0,22 \times 10^{-3}$
	15	0,331	4,67	4671,68	3,67	$0,21 \times 10^{-3}$
	30	0,359	5,02	5022,56	3,70	$0,20 \times 10^{-3}$
	45	0,373	5,20	5197,99	3,72	$0,19 \times 10^{-3}$
	60	0,383	5,32	5323,31	3,73	$0,19 \times 10^{-3}$
	75	0,430	5,91	5912,28	3,77	$0,17 \times 10^{-3}$

Persamaan garis orde reaksi:

Suhu	Orde	Persamaan Garis	r
40°	0	$y = 243,40x + 4208$	0,843
	1	$y = 0,020x + 3,629$	0,848
	2	$y = -0,00001x + 0,00$	0,846
55°	0	$y = 49,05x + 5229$	0,396
	1	$y = -0,004x + 3,718$	0,421
	2	$y = 0,000002x + 0,00$	0,408
70°	0	$y = 270,3x + 4149$	0,978
	1	$y = 0,023x + 3,625$	0,985
	2	$y = -0,00001x + 0,00$	0,983

Lampiran 4 (lanjutan)

Harga k pada masing-masing suhu:

T (°C)	T (°K)	1/T (1/K)	K	Log k
40	313	$3,195 \times 10^{-3}$	0,046	-1,699
55	328	$3,049 \times 10^{-3}$	0,009	-2,356
70	343	$2,915 \times 10^{-3}$	0,053	-1,276

Persamaan garis Regresi Linier 1/T vs Log k

$$A = 2,562 ; b = -1421,222$$

$$Y = -1421,222X + 2,562$$

K pada suhu 25°C:

$$K = Ae^{-E_a/RT}$$

$$\text{Log } k = -E_a/2.303RT \cdot 1/T + \text{Log } A$$

$$Y = BX \pm A$$

$$\text{Log } k_{25} = (-1421,222 \cdot 1/298) + 2,562$$

$$\text{Log } k_{25} = -3,862$$

$$K_{25} = 1,373 \times 10^{-7} \text{ menit}^{-1}$$

Waktu kadaluwarsa (t_{90}):

$$T_{90} = 0,105/k$$

$$T_{90} = 0,105/(1,373 \times 10^{-7}) = 764.608,812 \text{ menit}$$

$$= 1 \text{ tahun } 6 \text{ bulan}$$

Lampiran 4 (lanjutan)

Replikasi 3

Suhu	Waktu (menit)	Absorbansi	X (mcg/ml)	Ct (mcg/ml)	Log Ct	1/Ct (ml/mcg)
40°	0	0,303	4,32	4320,80	3,64	$0,23 \times 10^{-3}$
	15	0,351	4,92	4922,31	3,69	$0,20 \times 10^{-3}$
	30	0,328	4,63	4634,09	3,67	$0,22 \times 10^{-3}$
	45	0,355	4,97	4972,43	3,70	$0,20 \times 10^{-3}$
	60	0,359	5,02	5022,56	3,70	$0,20 \times 10^{-3}$
	75	0,422	5,81	5812,03	3,76	$0,17 \times 10^{-3}$
55°	0	0,251	3,67	3669,17	3,56	$0,27 \times 10^{-3}$
	15	0,387	5,37	5373,43	3,73	$0,19 \times 10^{-3}$
	30	0,347	4,87	4872,18	3,69	$0,21 \times 10^{-3}$
	45	0,354	4,96	4959,90	3,70	$0,20 \times 10^{-3}$
	60	0,361	5,05	5047,62	3,70	$0,20 \times 10^{-3}$
	75	0,369	5,15	5147,87	3,71	$0,19 \times 10^{-3}$
70°	0	0,385	5,35	5348,37	3,73	$0,19 \times 10^{-3}$
	15	0,288	4,13	4132,83	3,62	$0,24 \times 10^{-3}$
	30	0,369	5,15	5147,87	3,71	$0,19 \times 10^{-3}$
	45	0,375	5,22	5223,06	3,72	$0,19 \times 10^{-3}$
	60	0,342	4,81	4809,52	3,68	$0,21 \times 10^{-3}$
	75	0,399	5,52	5523,81	3,74	$0,18 \times 10^{-3}$

Persamaan garis untuk tiap orde reaksi:

Suhu	Orde	Persamaan Garis	r
40°	0	$y = 231,2x + 4137$	0,866
	1	$y = 0,02x + 3,622$	0,878
	2	$y = -0,000009x + 0,00$	0,873
55°	0	$y = 185,8x + 4194$	0,578
	1	$y = 0,018x + 3,616$	0,601
	2	$y = -0,00001x + 0,00$	0,595
70°	0	$y = 85,21x + 4732$	0,318
	1	$y = 0,007x + 3,672$	0,324
	2	$y = -0,000004x + 0,00$	0,321

Lampiran 4 (lanjutan)

Harga k pada berbagai suhu

T (°C)	T (°K)	1/T (1/K)	K	Log k
40	313	$3,195 \times 10^{-3}$	0,046	-1,337
55	328	$3,049 \times 10^{-3}$	0,041	-1,387
70	343	$2,915 \times 10^{-3}$	0,016	-1,793

Persamaan garis Regresi Linier 1/T vs Log k

$$A = -6,419 ; b = 1609,423$$

$$Y = 1609,423X - 6,419$$

K pada suhu 25°C:

$$K = Ae^{-E_a/RT}$$

$$\text{Log } k = -E_a/2.303RT \cdot 1/T + \text{Log } A$$

$$Y = BX \pm A$$

$$\text{Log } k_{25} = (1609,423 \cdot 1/298) - 6,419$$

$$\text{Log } k_{25} = -4,072$$

$$K_{25} = 10,47 \times 10^{-8} \text{ menit}^{-1}$$

Waktu kadaluwarsa (t_{90}):

$$T_{90} = 0,105/k$$

$$T_{90} = 0,105/(10,47 \times 10^{-8}) = 1.002.865,33 \text{ menit}$$

$$= 1 \text{ tahun } 11 \text{ bulan}$$

Lampiran 4 (lanjutan)

Hasilperhitungankadarparasetamoldengankandunganampastahu 6%

Replikasi 1

Suhu	Waktu (menit)	Absorbansi	X (mcg/ml)	Ct (mcg/ml)	Log Ct	1/Ct (ml/mcg)
40°	0	0,323	4,57	4571,43	3,66	$0,22 \times 10^{-3}$
	15	0,343	4,82	4822,06	3,68	$0,21 \times 10^{-3}$
	30	0,363	5,07	5072,68	3,71	$0,20 \times 10^{-3}$
	45	0,389	5,40	5398,50	3,73	$0,19 \times 10^{-3}$
	60	0,401	5,55	5548,87	3,74	$0,18 \times 10^{-3}$
	75	0,377	5,25	5248,12	3,72	$0,19 \times 10^{-3}$
55°	0	0,304	4,33	4333,33	3,64	$0,23 \times 10^{-3}$
	15	0,313	4,45	4446,12	3,65	$0,22 \times 10^{-3}$
	30	0,354	4,96	4959,90	3,70	$0,20 \times 10^{-3}$
	45	0,327	4,62	4621,55	3,66	$0,22 \times 10^{-3}$
	60	0,348	4,88	4884,71	3,69	$0,20 \times 10^{-3}$
	75	0,369	5,15	5147,87	3,71	$0,19 \times 10^{-3}$
70°	0	0,201	3,04	3042,61	3,48	$0,33 \times 10^{-3}$
	15	0,200	3,03	3030,08	3,48	$0,33 \times 10^{-3}$
	30	0,203	3,07	3067,67	3,49	$0,33 \times 10^{-3}$
	45	0,277	3,99	3994,99	3,60	$0,25 \times 10^{-3}$
	60	0,264	3,83	3832,08	3,58	$0,26 \times 10^{-3}$
	75	0,233	3,44	3443,61	3,54	$0,29 \times 10^{-3}$

Persamaan garis masing-masing orde:

Suhu	Orde	Persamaan Garis	r
40	0	$y = 168,20x + 4521$	0,860
	1	$y = 0,014x + 3,656$	0,868
	2	$y = -0,000007x + 0,00$	0,865
55	0	$y = 144,20x + 4227$	0,853
	1	$y = 0,013x + 3,627$	0,857
	2	$y = -0,000007x + 0,00$	0,270
70	0	$y = 152,5x + 2868$	0,665
	1	$y = 0,019x + 3,46$	0,705
	2	$y = -0,00001x + 0,00$	0,686

Lampiran4 (lanjutan)

Harga k pada berbagai suhu:

T (°C)	T (°K)	1/T (1/K)	K	Log k
40	313	$3,195 \times 10^{-3}$	-0,032	-1,495
55	328	$3,049 \times 10^{-3}$	-0,030	-1,523
70	343	$2,915 \times 10^{-3}$	-0,044	-1,356

Persamaan garis Regresi Linear 1/T vs Log k

$$A = 0,026 ; b = -486,182$$

$$Y = -486,182X + 0,026$$

K pada suhu 25°C:

$$K = Ae^{-E_a/RT}$$

$$\text{Log } k = -E_a/2.303RT \cdot 1/T + \text{Log } A$$

$$Y = BX \pm A$$

$$\text{Log } k_{25} = (-486,182 \cdot 1/298) + 0,026$$

$$\text{Log } k_{25} = -4,045$$

$$K_{25} = 9,024 \times 10^{-8} \text{ menit}^{-1}$$

Waktu kadaluwarsa (t_{90}):

$$T_{90} = 0,105/k$$

$$T_{90} = 0,105/(9,024 \times 10^{-8}) = 1.163.561,383 \text{ menit}$$

$$= 2 \text{ tahun } 2 \text{ bulan}$$

Lampiran 4 (lanjutan)

Replikasi 2

Suhu	Waktu (Menit)	Absorbansi	X (mcg/ml)	Ct (mcg/ml)	Log Ct	1/Ct (ml/mg)
40°	0	0,398	5,51	5511,28	3,74	$0,18 \times 10^{-3}$
	15	0,366	5,11	5110,28	3,71	$0,20 \times 10^{-3}$
	30	0,368	5,14	5135,34	3,71	$0,19 \times 10^{-3}$
	45	0,374	5,21	5210,53	3,72	$0,19 \times 10^{-3}$
	60	0,388	5,39	5385,96	3,73	$0,19 \times 10^{-3}$
	75	0,399	5,52	5523,81	3,74	$0,18 \times 10^{-3}$
55°	0	0,293	4,20	4195,49	3,62	$0,24 \times 10^{-3}$
	15	0,317	4,50	4496,24	3,65	$0,22 \times 10^{-3}$
	30	0,349	4,90	4897,24	3,69	$0,20 \times 10^{-3}$
	45	0,323	4,57	4571,43	3,66	$0,22 \times 10^{-3}$
	60	0,339	4,77	4771,93	3,68	$0,21 \times 10^{-3}$
	75	0,343	4,82	4822,06	3,68	$0,21 \times 10^{-3}$
70°	0	0,222	3,31	3305,76	3,52	$0,30 \times 10^{-3}$
	15	0,206	3,11	3105,26	3,49	$0,32 \times 10^{-3}$
	30	0,201	3,04	3042,61	3,48	$0,33 \times 10^{-3}$
	45	0,276	3,98	3982,46	3,60	$0,25 \times 10^{-3}$
	60	0,201	3,04	3042,61	3,48	$0,33 \times 10^{-3}$
	75	0,200	3,03	3030,08	3,48	$0,33 \times 10^{-3}$

Persamaan garis pada berbagai orde reaksi:

Suhu	Orde	Persamaan Garis	r
40	0	$y = 27,56x + 5216$	0,277
	1	$y = 0,002x + 3,717$	0,283
	2	$y = -0,000001x + 0,00$	0,281
55	0	$y = 103,8x + 4262$	0,746
	1	$y = 0,01x + 3,629$	0,757
	2	$y = -0,000005x + 0,00$	0,751
70	0	$y = -17,90x + 3314$	0,089
	1	$y = -0,002x + 3,519$	0,138
	2	$y = 0,000002x + 0,00$	0,109

Lampiran 4 (lanjutan)

Harga k pada berbagai suhu:

T (°C)	T (°K)	1/T (1/K)	K	Log k
40	313	$3,195 \times 10^{-3}$	-0,004	-2,398
55	328	$3,049 \times 10^{-3}$	-0,023	-1,638
70	343	$2,915 \times 10^{-3}$	0,031	-1,503

Persamaan Regresi Linear 1/T vs Log k

$$A = 8,004 ; b = -3226,341$$

$$Y = -3226,341X + 8,004$$

K pada suhu 25°C:

$$K = Ae^{-E_a/RT}$$

$$\text{Log } k = -E_a/2.303RT \cdot 1/T + \text{Log } A$$

$$Y = BX \pm A$$

$$\text{Log } k_{25} = (-3226,341 \cdot 1/298) + 8,004$$

$$\text{Log } k_{25} = -3,9522$$

$$K_{25} = 1,12 \times 10^{-7} \text{ menit}^{-1}$$

Waktu kadaluwarsa (t_{90}):

$$T_{90} = 0,105/k$$

$$T_{90} = 0,105/(1,12 \times 10^{-7}) = 940.566,0508 \text{ menit}$$

$$= 1 \text{ tahun } 9 \text{ bulan}$$

Lampiran 4 (lanjutan)

Replikasi 3

Suhu	Waktu (Menit)	Absorbansi	X (mcg/ml)	Ct (mcg/ml)	Log Ct	1/Ct (ml/mcg)
40°	0	0,367	5,12	5122,81	3,71	$0,20 \times 10^{-3}$
	15	0,353	4,95	4947,37	3,69	$0,20 \times 10^{-3}$
	30	0,349	4,90	4897,24	3,69	$0,20 \times 10^{-3}$
	45	0,394	5,46	5461,15	3,74	$0,18 \times 10^{-3}$
	60	0,405	5,60	5599,00	3,75	$0,18 \times 10^{-3}$
	75	0,497	6,75	6751,88	3,83	$0,15 \times 10^{-3}$
55°	0	0,306	4,36	4358,40	3,64	$0,23 \times 10^{-3}$
	15	0,324	4,58	4583,96	3,66	$0,22 \times 10^{-3}$
	30	0,376	5,24	5235,59	3,72	$0,19 \times 10^{-3}$
	45	0,328	4,63	4634,09	3,67	$0,22 \times 10^{-3}$
	60	0,339	4,77	4771,93	3,68	$0,21 \times 10^{-3}$
	75	0,354	4,96	4959,90	3,70	$0,20 \times 10^{-3}$
70°	0	0,127	2,12	2115,29	3,33	$0,47 \times 10^{-3}$
	15	0,216	3,23	3230,58	3,51	$0,31 \times 10^{-3}$
	30	0,193	2,94	2942,36	3,47	$0,34 \times 10^{-3}$
	45	0,151	2,42	2416,04	3,38	$0,41 \times 10^{-3}$
	60	0,192	2,93	2929,82	3,47	$0,34 \times 10^{-3}$
	75	0,162	2,55	2553,88	3,41	$0,39 \times 10^{-3}$

Persamaan garis pada masing-masing orde reaksi:

Suhu	Orde	Persamaan Garis	r
40°	0	$y = 304,6x + 4396$	0,823
	1	$y = 0,023x + 3,654$	0,839
	2	$y = -0,000009x + 0,00$	0,833
55°	0	$y = 84,85x + 4460$	0,512
	1	$y = 0,008x + 3,648$	0,557
	2	$y = -0,000004x + 0,00$	0,536
70°	0	$y = 21,84x + 2621$	0,1
	1	$y = 0,005x + 3,407$	0,210
	2	$y = -0,000007x + 0,00$	0,155

Lampiran 4 (lanjutan)

Harga k padamasing-masing suhu:

T (°C)	T (°K)	1/T (1/K)	K	Log k
40	313	$3,195 \times 10^{-3}$	-0,053	-1,276
55	328	$3,049 \times 10^{-3}$	-0,018	-1,745
70	343	$2,915 \times 10^{-3}$	-0,012	-1,921

Persamaan garis Regresi Linear 1/T vs Log k

$$A = -8,721 ; b = 2317,102$$

$$Y = 2317,102X - 8,721$$

K pada suhu 25°C:

$$K = Ae^{-E_a/RT}$$

$$\text{Log } k = -E_a/2.303RT \cdot 1/T + \text{Log } A$$

$$Y = BX \pm A$$

$$\text{Log } k_{25} = (2317,102 \cdot 1/298) - 8,721$$

$$\text{Log } k_{25} = -3,98$$

$$K_{25} = 1,047 \times 10^{-7} \text{ menit}^{-1}$$

Waktu kadaluwarsa (t_{90}):

$$T_{90} = 0,105/k$$

$$T_{90} = 0,105/(1,047 \times 10^{-7}) = 1.002.742,215 \text{ menit}$$

$$= 1 \text{ tahun } 10 \text{ bulan}$$

Lampiran 5

HASIL PERHITUNGAN t_{90}

Nilai k pada masing-masing suhu ditentukan dengan menggunakan rumus:

$$A = A_0 - Kt$$

FORMULA I

Replikasi I

T (°C)	T (°K)	1/T (1/K)	K (jam ⁻¹)	Log k
40	313	3,195 x 10 ⁻³	3,19×10 ⁻³	-2,443
55	328	3,049 x 10 ⁻³	3,05×10 ⁻³	-2,367
70	343	2,915 x 10 ⁻³	2,91×10 ⁻³	-2,286

Persamaan regresi linier 1/T vs log k

$$\text{Log } k = -E_a/2,303RT \cdot 1/T + \text{Log } A$$

$$Y = bX + a \longrightarrow Y = -560X - 0,65$$

Nilai k pada suhu 25° :

$$\text{Suhu (T)} = 25^\circ\text{C} = 298^\circ\text{K}$$

$$Y = -560 (1/298) - 0,65$$

$$\text{Log } k = -5,059$$

$$K_{25} = 8,73 \times 10^{-6} \text{ jam}^{-1}$$

$$T_{90} = 0,105/k = 0,105/(8,73 \times 10^{-6}) = \mathbf{16,70 \text{ bulan}}$$

Replikasi 2

T (°C)	T (°K)	1/T (1/K)	K (jam ⁻¹)	Log k
40	313	3,195 x 10 ⁻³	4,53×10 ⁻³	-2,343
55	328	3,049 x 10 ⁻³	5,25×10 ⁻³	-2,28
70	343	2,915 x 10 ⁻³	3,69×10 ⁻³	-2,432

Lampiran5 (lanjutan)

Persamaanregresi linier 1/T vs log k

$$\text{Log } k = -Ea/2,303RT \cdot 1/T + \text{Log } A$$

$$Y = b X + a \longrightarrow Y = -306,70X - 3,28$$

Nilai k padasuhu25° :

$$\text{Suhu (T)} = 25^{\circ}\text{C} = 298^{\circ}\text{K}$$

$$Y = -306,70 (1/298) - 3,28$$

$$\text{Log } k = -4,50$$

$$K_{25} = 3,16 \times 10^{-5} \text{ jam}^{-1}$$

$$T_{90} = 0,105/k = 0,105/(3,16 \times 10^{-5}) = 4,63 \text{ bulan}$$

Replikasi 3

T (°C)	T (°K)	1/T (1/K)	K (jam ⁻¹)	Log k
40	313	3,195 x 10 ⁻³	5,39×10 ⁻³	-2,268
55	328	3,049 x 10 ⁻³	5,03×10 ⁻³	-2,298
70	343	2,915 x 10 ⁻³	5,94×10 ⁻³	-2,226

Persamaanregresi linier 1/T vs log k

$$\text{Log } k = -Ea/2,303RT \cdot 1/T + \text{Log } A$$

$$Y = b X + a \longrightarrow Y = -144,71X - 1,82$$

Nilai k padasuhu25° :

$$\text{Suhu (T)} = 25^{\circ}\text{C} = 298^{\circ}\text{K}$$

$$Y = -144,71 (1/298) - 1,82$$

$$\text{Log } k = -5,01$$

$$K_{25} = 9,74 \times 10^{-6} \text{ jam}^{-1}$$

Lampiran5 (lanjutan)

$$T_{90} = 0,105/k = 0,105/(9,74 \times 10^{-6}) = \mathbf{14,97 \text{ bulan}}$$

FORMULA II

Replikasi I

T (°C)	T (°K)	1/T (1/K)	K (jam ⁻¹)	Log k
40	313	3,195 x 10 ⁻³	5,57 × 10 ⁻³	-2,25
55	328	3,049 x 10 ⁻³	5,05 × 10 ⁻³	-2,29
70	343	2,915 x 10 ⁻³	5,79 × 10 ⁻³	-2,24

Persamaan regresi linier 1/T vs log k

$$\text{Log } k = -E_a/2,303RT \cdot 1/T + \text{Log } A$$

$$Y = bX + a \longrightarrow Y = -31,103X - 2,16$$

Nilai k pada suhu 25° :

$$\text{Suhu (T)} = 25^\circ\text{C} = 298^\circ\text{K}$$

$$Y = -31,103 (1/298) - 2,16$$

$$\text{Log } k = -5,20$$

$$K_{25} = \mathbf{6,34 \times 10^{-6} \text{ jam}^{-1}}$$

$$T_{90} = 0,105/k = 0,105/(6,34 \times 10^{-6}) = \mathbf{23,01 \text{ bulan}}$$

Replikasi 2

T (°C)	T (°K)	1/T (1/K)	K(jam ⁻¹)	Log k
40	313	3,195 x 10 ⁻³	5,08 × 10 ⁻³	-2,29
55	328	3,049 x 10 ⁻³	5,9 × 10 ⁻³	-2,28
70	343	2,915 x 10 ⁻³	5,3 × 10 ⁻³	-1,27

Lampiran5 (lanjutan)

Persamaanregresi linier 1/T vs log k

$$\text{Log } k = -Ea/2,303RT \cdot 1/T + \text{Log } A$$

$$Y = b X + a \longrightarrow Y = -3589,64X + 9,01$$

Nilai k padasuhu25° :

$$\text{Suhu (T)} = 25^{\circ}\text{C} = 298^{\circ}\text{K}$$

$$Y = -3589,64 (1/298) - 9,01$$

$$\text{Log } k = -5,01$$

$$K_{25} = 9,77 \times 10^{-6} \text{jam}^{-1}$$

$$T_{90} = 0,105/k = 0,105/(9,77 \times 10^{-6}) = 14,92 \text{bulan}$$

Replikasi 3

T (°C)	T (°K)	1/T (1/K)	K (jam-1)	Log k
40	313	$3,195 \times 10^{-3}$	$5,02 \times 10^{-3}$	-2,30
55	328	$3,049 \times 10^{-3}$	$5,05 \times 10^{-3}$	-2,29
70	343	$2,915 \times 10^{-3}$	$4,81 \times 10^{-3}$	-2,32

Persamaanregresi linier 1/T vs log k

$$\text{Log } k = -Ea/2,303RT \cdot 1/T + \text{Log } A$$

$$Y = b X + a \longrightarrow Y = 69,34X - 2,51$$

Nilai k padasuhu25° :

$$\text{Suhu (T)} = 25^{\circ}\text{C} = 298^{\circ}\text{K}$$

$$Y = 69,34 (1/298) - 2,51$$

$$\text{Log } k = -5,09$$

$$K_{25} = 8,13 \times 10^{-6} \text{jam}^{-1}$$

Lampiran5 (lanjutan)

$$T_{90} = 0,105/k = 0,105/(8,13 \times 10^{-6}) = \mathbf{17,94 \text{ bulan}}$$

FORMULA III

Replikasi 1

T (°C)	T (°K)	1/T (1/K)	K (Jam ⁻¹)	Log k
40	313	$3,195 \times 10^{-3}$	$5,55 \times 10^{-3}$	-2,25
55	328	$3,049 \times 10^{-3}$	$4,88 \times 10^{-3}$	-2,31
70	343	$2,915 \times 10^{-3}$	$3,83 \times 10^{-3}$	-2,41

Persamaanregresi linier 1/T vs log k

$$\text{Log k} = -Ea/2,303RT \cdot 1/T + \text{Log A}$$

$$Y = b X + a \longrightarrow Y = 576,076X - 4,083$$

Nilai k padasuhu25° :

$$\text{Suhu (T)} = 25^\circ\text{C} = 298^\circ\text{K}$$

$$Y = 576,076 (1/298) - 4,083$$

$$\text{Log k} = -5,17$$

$$K_{25} = \mathbf{6,76 \times 10^{-6} \text{ jam}^{-1}}$$

$$T_{90} = 0,105/k = 0,105/(6,76 \times 10^{-6}) = \mathbf{21,57 \text{ bulan}}$$

Replikasi 2

T (°C)	T (°K)	1/T (1/K)	K (jam ⁻¹)	Log k
40	313	$3,195 \times 10^{-3}$	$5,39 \times 10^{-3}$	-2,27
55	328	$3,049 \times 10^{-3}$	$4,77 \times 10^{-3}$	-2,32
70	343	$2,915 \times 10^{-3}$	$3,04 \times 10^{-3}$	-2,52

Persamaanregresi linier 1/T vs log k

$$\text{Log k} = -Ea/2,303RT \cdot 1/T + \text{Log A}$$

$$Y = b X + a \longrightarrow Y = 884,66X - 5,071$$

Lampiran5 (lanjutan)

Nilai k padasuhu25° :

Suhu (T)= 25°C =298°K

Y= 884,66 (1/298) – 5,071

Log k= -5,25

K₂₅= 5,62×10⁻⁶jam⁻¹

T₉₀= 0,105/k = 0,105/(6,76×10⁻⁶) =25,93 bulan

Replikasi 3

T (°C)	T (°K)	1/T (1/K)	K (jam ⁻¹)	Log k
40	313	3,195 x 10 ⁻³	5,60×10 ⁻³	-2,12
55	328	3,049 x 10 ⁻³	4,77×10 ⁻³	-2,25
70	343	2,915 x 10 ⁻³	2,93×10 ⁻³	-2,53

Persamaanregresi linier 1/T vs log k

Log k = -Ea/2,303RT .1/T + Log A

Y = b X + a → Y= 992,25X – 5,96

Nilai k padasuhu25° :

Suhu (T)= 25°C =298°K

Y= 992,25 (1/298) – 5,96

Log k= -5,06

K₂₅= 8,71×10⁻⁶jam⁻¹

T₉₀= 0,105/k = 0,105/(8,71×10⁻⁶) =16,74 bulan

Lampiran5 (lanjutan)

Rata-rata t_{90} pada formula I, II, dan III

Formula	T90 (bulan)
I	12,09
II	18,62
III	21,41