

DAFTAR PUSTAKA

- Abatzopoulos, Th. J., Beardmore, J. A., Clegg, J.S., dan Sorgeloos, P. 1996. *Biology of Aquatic Organism: Artemia-Basic and Applied Biology*. <http://www.captain.at/artemia/> [25 Agustus 2009]. [skripsi]. UNSEMAR, Surakarta, 2010.
- Ambarningrum T.B., Praktinyo H., dan Priyanto S. 2009. Indeks Nutrisi Dan Kesintasan Larva Spodoptera Litura F. Yang Diberi Pakan Mengandung Ekstrak Kulit Jengkol (*Pithecellobium lobatum Benth.*). *J.HPT Tropika*. 9 (2): 109-114
- Anonim, 2009. Petroleum Ether. <http://www.jtbaker.com/msds/englishhtml/P1696.htm>. Diakses Tanggal 28 November 2009
- Atmoko ,T dan A, Ma'ruf. 2009. Uji Toksisitas Dan Skrining Fitokimia Ekstrak Tumbuhan Sumber Pakan Orang Utan Terhadap Larva Artemia salina Leach. *Jurnal penelitian Hutan Dan Konservasi Alam VI* (1): 39.
- Elysa, 2011. Uji Efek Ekstrak Etanol Biji Jengkol (*Pithecellobium jiringa*) Terhadap Penurunan Kadar Glukosa Darah Tikus Putih Jantan Galur Wistar yang diinduksi Aloksan. *Skripsi*. Sumatera Utara : Universitas Sumatera Utara.
- Emslie, S 2003. *Artemia salina Leach.-Brine Shrimp-Ses Monkeys*. http://www.animaldiversity.ummz.umich.edu/site/accounts/information/Artemia_salina.html [21 April 2009].
- Hopkins, W. G. and N. P. A.HOner. 2004. *Introduction to Plant Physiology*. Third Edition. John Wiley and Sons, Inc. Ontario.
- Hutahuruk, J.E., (2010), *Isolasi Senyawa Flavonoida Dari Kulit Buah Tanaman Jengkol (Pithecellobium lobatum Benth.)*, Skripsi, FMIPA, USU
- Hutasuhut, A.B., (2012), *Banjir, Jengkol, Rahudman*, <http://www.hariansumutpos.com/2012/01/23377/banjir-jengkol-rahudman.html>, 13 Maret 2012.
- Hyeronimus S.B 2008. *Ragam dan Khasiat Tanaman Obat*. 1st ed. Agro Media. Jakarta.
- Kanwar, A.S. 2007. Brine Shrimp (*Artemia salina*) a Marine Animal for Simple and Rapid Biological Assays. *Chinese Clinical Medicine* 2 (4): 35-42.
- Kardinan, A. 2001. *Pestisida nabati, ramuan, dan aplikasi*. PT Penebar Swadaya, Jakarta.

- Lay, A., (2009), Pembuang Kulit Jengkol sedang Diintai, <http://www.borneotribune.com/pontianak-kota/pembuang-kulit-jengkol-sedang-diintai.html>, Jumat, 6 Maret 2009, 14:58
- Makalalag, A. Skrining Fitokimia dan Uji Toksisitas Akut Ekstrak Etanol Daun Turi (*Sesbania Gandiflora* Pers). [skripsi]. UNSRAT, Manado, 2011.
- Meyer, B.N., N.R. Ferrighni, J.E. Put-nam, L.B. Jacobson, D.E. Nichols and J.L. McLaughlin, 1982. Brine Shrimp: A Convenient General Bioassay for Active Plant Constituent. *Planta Me-dica*. 45 : 31-34.
- Mudjiman, A. 1995. *Makanan Ikan*. Jakarta: PT. Penerbit Swadaya.
- Novizan. 2002. *Membuat dan Memanfaatkan Pestisida Ramah Lingkungan*. Agromedia Pustaka, Jakarta.
- Nurussakinah, (2010), *Skrinning Fitokimia dan Uji Aktivitas Antibakteri Ekstrak Kulit Buah Tanaman Jengkol (Pithecellobium jiringa (Jack) Prain) Terhadap Bakteri Streptococcus mutans, Staphylococcus aureus, dan Eschericia coli*, Skripsi, Fakultas Farmasi, USU, Medan
- Opinion. 15 Januari 2008. *Artemia, Pakan Alami Berkualitas untuk Ikan dan Udang*. <http://www.opinion.com/MembangunIndonesia.htm> [27 April 2009]
- Pitojo, S. 1995. *Jengkol, Budidaya, dan Pemanfaatannya*. Penerbit Kanisius, Yogyakarta.
- Pitoyo, 2004. *Artemia salina (kegunaan, Biologi dan Kulturnya)*. INFIS Manual Seri No.12. Direktorat Jendral Perikanan dan International Development Research Centre.
- Prastiwi, DT. 2007 Indeks Pertumbuhan Larva Nyamuk *Aedes aegypti* yang terdedah dalam Ekstrak Kulit Jengkol. Unsoed. Pwt.
- Pujiati, I., S. Ningsih, S. Palupi dan Tri Windono, 2002. Uji toksisitas terhadap larva *Artemia salina* Leach. Dari fraksi n-heksan, khloroform, etil asetat dan air ekstrak etanol rimpang temumangga (*Curcuma mangga* VaL). Prosiding Seminar Nasional Tumbuhan Obat Indonesia XXI. Universitas Surabaya, Surabaya : 109-115.
- Purwakusuma, Wahyu, (2007), *Artemia salina (Brine Shrimp)*. <http://www.ofish.com/PakanIkan/artemia.php>. 30 Oktober 2007.
- Soparat, S. 2010. Chemical Ecology and Function of Alkaloids. <http://pirun.ku.ac.th/~g4686045/media/alkaloid.pdf>.

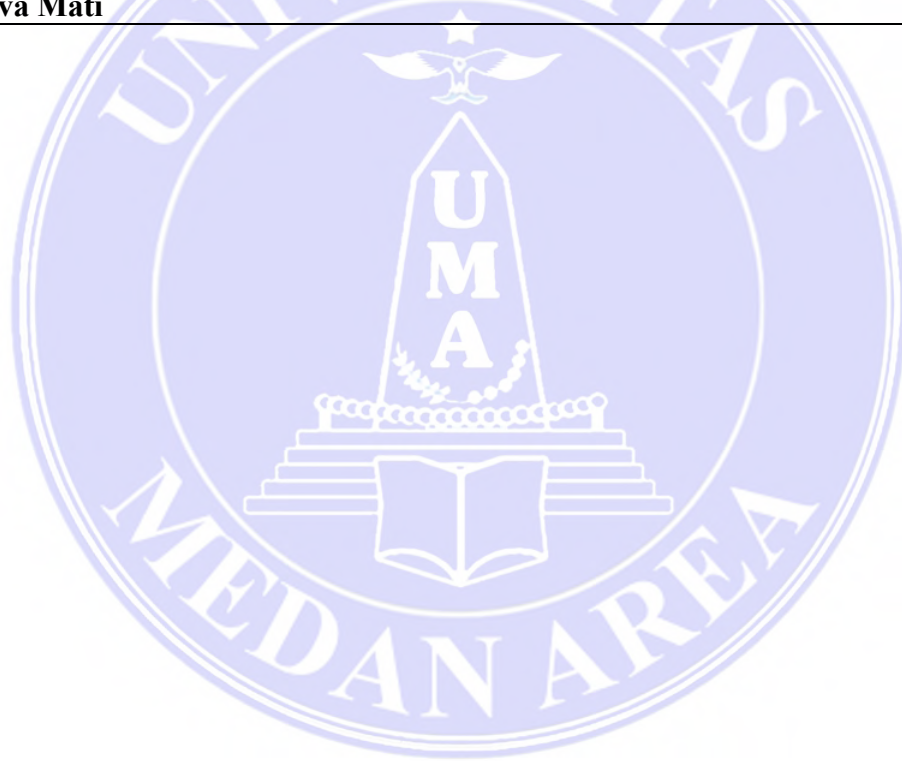
Tjokronegoro, R.K., Sofjatin, T., Supatmijati, J.1998. Pemanfaatan Kulit Jengkol Sebagai Insektisida : isolasi dan Identifikasi Pemula dari Senyawa-senyawa Aktif. Laporan Penelitian (tidak dipublikasikan). FMIPA Universitas Padjadjaran, Bandung.



LAMPIRAN

Lampiran 1. Data Hasil Observasi Ekstrak Kulit Jengkol (*Pithecellobium jiringa*) Terhadap Larva Udang *Artemia salina* Leach dalam 5 jam.

WAKTU	ULANGAN I				ULANGAN II				ULANGAN III			
	P0	P1	P2	P3	P0	P1	P2	P3	P0	P1	P2	P3
13.00–14.00	–	–	2	3	–	1	2	2	–	1	2	2
14.00–15.00	–	2	4	3	–	1	3	3	–	1	3	3
15.00–16.00	–	2	3	6	–	2	3	4	–	2	3	5
16.00–17.00	–	3	3	4	–	3	4	5	–	2	4	6
17.00–18.00	–	2	3	4	–	3	4	6	–	3	3	4
Jumlah larva Mati	0	9	15	20	0	10	16	20	0	9	15	20



Lampiran 2. Rancangan Acak Lengkap (RAL) Data Hasil Observasi

Konsentrasi	Larva Tiap Petri	ULANGAN			Larva Mati (Mortalitas)	Rata-rata Mortalitas
		I	II	III		
P0 (kontrol)	20	0	0	0	0	0
P1 (5%)	20	9	10	9	28	9,3
P2 (10%)	20	15	16	15	46	15,3
P3 (15%)	20	20	20	20	60	20
TOTAL =					134	

$$CF = FK = \frac{\text{Grand total}^2}{\text{Jumlah data}} = \frac{134^2}{12} = 1496,3$$

$$\begin{aligned} JK_{\text{Total}} &= \sum y_i^2 - FK \\ &= 0^2 + 0^2 + 0^2 + 9^2 + 10^2 + 9^2 + 15^2 + 16^2 + 15^2 + 20^2 + 20^2 + 20^2 - 1496,3 \\ &= 2168 - 1496,3 \\ &= 671,7 \end{aligned}$$

$$\begin{aligned} JK_{\text{Perlakuan}} &= \frac{\sum T^2}{\text{Ulangan}} - FK = \frac{0^2 + 28^2 + 46^2 + 60^2}{3} - 1496,3 \\ &= \frac{6674}{3} - 1496,3 \\ &= 670,4 \end{aligned}$$

$$\begin{aligned} JK_{\text{Galat}} &= JK_{\text{Total}} - JK_{\text{perlakuan}} = 671,7 - 670,4 \\ &= 1,3 \end{aligned}$$

Lampiran 3. Perhitungan ANOVA dan LSD Data Hasil Observasi

A. ANOVA

Sumber Variasi	Db	JK	KT	F _{hitung}	F _{tabel}	
					0,05	0,01
4 Konsentrasi	3	670,4	223,5	1396,8	4,07	7,59
Galat	8	1,3	0,16			
Total	11					

F_{hitung} ≥ F_{tabel} Maka Ada Beda Nyata

B. LSD

$$\text{LSD } \alpha = t \alpha (\text{db galat}) \times \sqrt{\frac{2 \cdot \text{KT galat}}{\text{Ulangan}}}$$

$$\begin{aligned} \text{LSD } 0,05 &= 0,05 (8) \times \sqrt{\frac{2 \cdot 0,16}{3}} \\ &= 2,306 \times \sqrt{0,106} \\ &= 2,306 \times 0,32 \\ &= 0,74 \end{aligned}$$

Rank	Perlakuan	Mean	n Non-significant ranges
1	P3	20.0	a
2	P2	15.3	b
3	P1	9.3	c
4	P0	0.0	d

Lampiran 4. Perhitungan Korelasi dan Regresi Data Hasil Observasi

NO.	Konsentrasi (x)	Mortalitas (y)	x^2	y^2	Xy
1	0	0	0	0	0
2	5	9,3	25	86,49	46,5
3	10	15,3	100	234,09	153
4	15	20	225	400	300
$\sum x = 30$ $\bar{X} = 7,5$		$\sum y = 44,6$ $\bar{Y} = 11,15$	$\sum x^2 = 350$	$\sum y^2 = 720,58$	$\sum xy = 499,5$

A. Korelasi

$$r = \frac{[\sum xy - \frac{\sum x \cdot \sum y}{n}]^2}{(\sum x^2 - \frac{\sum x^2}{n})^2 (\sum y^2 - \frac{\sum y^2}{n})^2}$$

$$r = \frac{[499,5 - \frac{30 \cdot 44,6}{4}]^2}{(350 - \frac{30^2}{4})^2 (720,58 - \frac{44,6^2}{4})^2}$$

$$r = \frac{[499,5 - 334,5]^2}{(350 - 225)(720,58 - 497,29)}$$

$$r = \frac{[165]^2}{(125)(223,29)}$$

$$r = \sqrt{\frac{27225}{27911,25}}$$

$$r = \sqrt{0,97541}$$

$$r = 0,98$$

B. Regresi

$$y = a + bx$$

$$a = \bar{y} - b\bar{x}$$

$$\begin{aligned} b &= \frac{\sum xy - \frac{\sum x \cdot \sum y}{n}}{\sum x^2 - \frac{(\sum x)^2}{n}} \\ &= \frac{[499,5 - \frac{30 \cdot 44,6}{4}]}{(350 - \frac{30^2}{4})^2} \\ &= \frac{499,5 - 334,5}{350 - 225} \\ &= \frac{165}{125} \\ &= 1,32 \end{aligned}$$

$$a = \bar{y} - b\bar{x}$$

$$= 11,15 - 1,32 \cdot 7,5$$

$$= 11,15 - 9,9$$

$$= 1,25$$

$$y = a + bx$$

$$= 1,25 + 1,32x$$

$$= 1,32x + 1,25$$

Potongan sumbu $y \Rightarrow x = 0$

$$y = 1,32x + 1,25$$

$$y = 1,32(0) + 1,25$$

$$y = 1,25$$

Potongan sumbu $x \Rightarrow y = 0$

$$y = 1,32x + 1,25$$

$$0 = 1,32x + 1,25$$

$$1,25 = 1,32x$$

$$x = \frac{1,25}{1,32}$$

$$x = 0,95$$

Sedangkan jika $y = 10$

$$y = 1,25 + 1,32x$$

$$10 = 1,25 + 1,32x$$

$$1,25 + 1,32x = 10$$

$$1,32x = 10 - 1,25$$

$$1,32x = 8,75$$

$$x = \frac{8,75}{1,32}$$

$$x = 6,6$$

Lampiran 5. Data Hasil Eksploratory Ekstrak Kulit Jengkol (*Pithecellobium jiringa*) Terhadap Larva Udang *Artemia salina* Leach dalam 24 jam

WAKTU	ULANGAN I					ULANGAN II					ULANGAN III							
	P0	P1	P2	P3	P4	P5	P0	P1	P2	P3	P4	P5	P0	P1	P2	P3	P4	P5
09.00 – 10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.00 – 11.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
11.00 – 12.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1
12.00 – 13.00	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
13.00 – 14.00	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	1	2	1
14.00 – 15.00	-	-	-	-	-	1	-	-	-	1	-	1	-	-	-	-	-	-
15.00 – 16.00	-	-	-	-	1	1	-	-	1	-	2	-	-	-	-	2	-	1
16.00 – 17.00	-	-	-	-	1	-	-	-	2	-	1	-	-	-	-	-	2	2
17.00 – 18.00	-	-	-	1	-	2	-	-	1	-	-	2	-	-	-	-	-	-
18.00 – 19.00	-	-	1	1	1	-	-	-	1	2	1	-	-	1	-	1	-	-
19.00 – 20.00	-	-	1	-	1	1	-	-	1	-	-	-	-	1	-	1	-	1
20.00 – 21.00	-	1	-	1	-	2	-	1	-	-	1	2	-	-	-	-	2	-
21.00 – 22.00	-	-	-	1	3	2	-	-	-	1	-	-	-	-	1	2	-	2
22.00 – 23.00	-	1	1	-	-	1	-	-	2	-	1	2	-	-	-	-	2	-
23.00 – 00.00	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
00.00 – 00.30	-	-	-	-	2	-	-	-	2	2	1	-	-	-	-	1	-	-
00.30 – 01.30	-	-	1	-	-	-	-	1	-	-	-	1	-	-	-	-	2	-
01.30 – 02.30	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
02.30 – 03.30	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
03.30 – 04.30	-	-	-	1	-	-	-	-	1	-	-	2	-	-	2	-	-	-
04.30 – 05.30	-	-	1	-	-	2	-	-	-	1	-	-	-	-	-	1	1	2
05.30 – 06.30	-	-	-	1	1	-	-	-	1	-	1	-	-	1	-	-	-	-
06.30 – 07.30	-	-	1	1	-	1	-	1	-	-	-	1	-	-	1	1	-	-
07.30 – 08.30	-	1	-	-	1	2	-	-	-	1	1	-	-	-	1	-	-	1
Jumlah Larva																		
Mati	0	3	6	9	13	17	0	3	7	10	11	15	0	2	6	10	14	13

Lampiran 6. Rancangan Acak Lengkap (RAL) Data Hasil Eksploratory

Konsentrasi	Jumlah Larva tiap petri	ULANGAN			Larva Mati (Mortalitas)	Rata-rata Mortalitas
		I	II	III		
P0 (kontrol)	20	0	0	0	0	0
P1 (1%)	20	3	3	2	8	2,7
P2 (3%)	20	6	7	6	19	6,3
P3 (3%)	20	9	10	10	29	9,7
P4 (7%)	20	13	11	14	38	12,7
P5 (9%)	20	17	15	13	45	15
Total =					139	

$$CF = FK = \frac{\text{Grand total}^2}{\text{Jumlah data}} = \frac{139^2}{18} = 1073,38$$

$$\begin{aligned}
 JK_{\text{Total}} &= \sum y_i^2 - FK \\
 &= 0^2 + 0^2 + 0^2 + 3^2 + 3^2 + 2^2 + 6^2 + 7^2 + 6^2 + 9^2 + 10^2 + 10^2 + 13^2 + 11^2 + 14^2 + \\
 &\quad 17^2 + 15^2 + 13^2 - 1073,38 \\
 &= 1593 - 1073,38 \\
 &= 519,6
 \end{aligned}$$

$$\begin{aligned}
 JK_{\text{Perlakuan}} &= \frac{\sum T^2}{\text{Ulangan}} - FK = \frac{0^2 + 8^2 + 19^2 + 29^2 + 38^2 + 45^2}{3} - 1073,38 \\
 &= \frac{4735}{3} - 1073,38 \\
 &= 504,9
 \end{aligned}$$

$$\begin{aligned}
 JK_{\text{Galat}} &= JK_{\text{Total}} - JK_{\text{perlakuan}} = 519,6 - 504,9 \\
 &= 14,7
 \end{aligned}$$

Lampiran 7. Perhitungan ANOVA dan LSD Data Hasil Eksploratory

A. ANOVA

Sumber Variasi	Df	SS	Ms	F _{hitung}	F _{tabel}	
					0,05	0,01
6 Konsentrasi	5	504,9	100,98	82,09	3,11	5,06
Galat	12	14,7	1,23			
Total	17					

F_{hitung} ≥ F_{tabel} Maka Ada Beda Nyata

B. LSD

$$LSD \alpha = t \alpha (\text{db galat}) \times \sqrt{\frac{2 \cdot KT \text{ galat}}{\text{Ulangan}}}$$

$$\begin{aligned}
 LSD_{0,05} &= 0,05 (12) \times \sqrt{\frac{2 \cdot 1,23}{3}} \\
 &= 2,179 \times \sqrt{0,82} \\
 &= 2,179 \times 0,91 \\
 &= 1,98
 \end{aligned}$$

Rank Perlakuan Mean n Non-significant ranges

1	P5	15.0	a
2	P2	12.7	b
3	P3	9.7	c
4	P2	6.3	d
5	P1	2.7	e
6	P0	0.0	f

Lampiran 8. Perhitungan Korelasi dan Regresi Data Hasil Eksploratory

NO.	Konsentrasi (x)	Mortalitas (y)	x^2	y^2	xy
1	0	0	0	0	0
2	1	2,7	1	7,29	2,7
3	3	6,3	9	39,69	18,9
4	5	9,7	25	94,09	48,5
5	7	12,7	49	161,29	88,9
6	9	15	81	225	135
$\sum x = 25$ $\bar{X} = 4,16$		$\sum y = 46,4$ $\bar{Y} = 7,7$	$\sum x^2 = 165$	$\sum y^2 = 527,36$	$\sum xy = 294$

A. Korelasi

$$r = \frac{[\sum xy - \frac{\sum x \cdot \sum y}{n}]^2}{(\sum x^2 - \frac{\sum x^2}{n})^2 (\sum y^2 - \frac{\sum y^2}{n})^2}$$

$$r = \frac{[294 - \frac{25 \cdot 46,4}{6}]^2}{(165 - \frac{25^2}{6})^2 (527,36 - \frac{46,4^2}{6})^2}$$

$$r = \frac{[294 - 193,3]^2}{(165 - 104,16) (527,36 - 358,8)}$$

$$r = \frac{[100,7]^2}{(60,84) (168,56)}$$

$$r = \sqrt{\frac{10140,49}{10255,19}}$$

$$r = \sqrt{0,9888}$$

$$r = 0,99$$

B. Regresi

$$y = a + bx$$

$$a = \bar{y} - b\bar{x}$$

$$b = \frac{\sum xy - \frac{\sum x \cdot \sum y}{n}}{\sum x^2 - \frac{(\sum x)^2}{n}}$$
$$= \frac{[294 - \frac{25 \cdot 46,4}{6}]}{(165 - \frac{25^2}{6})^2}$$
$$= \frac{[294 - 193,3]}{(165 - 104,16)}$$
$$= \frac{100,7}{60,84}$$
$$= 1,65$$

$$a = \bar{y} - b\bar{x}$$

$$= 7,7 - 1,65 \cdot 4,16$$

$$= 7,7 - 6,9$$

$$= 0,8$$

$$y = a + bx$$

$$= 0,8 + 1,65x$$

$$= 1,65x + 0,8$$

Potongan sumbu y $\Rightarrow x = 0$

$$y = 1,65x + 0,8$$

$$y = 1,65(0) + 0,8$$

$$y = 0,8$$

Potongan sumbu x $\Rightarrow y = 0$

$$y = 1,65x + 0,8$$

$$0 = 1,65x + 0,8$$

$$0,8 = 1,65x$$

$$x = \frac{0,8}{1,65}$$

$$x = 0,48$$

Sedangkan jika $y = 10$

$$y = 0,8 + 1,65x$$

$$10 = 0,8 + 1,65x$$

$$0,8 + 1,65x = 10$$

$$1,65x = 10 - 0,8$$

$$1,65x = 9,2$$

$$x = \frac{9,2}{1,65}$$

$$x = 5,57$$

Lampiran 9. Data Hasil Full Scale Test Ekstrak Kulit Jengkol (*Pithecellobium jiringa*) Terhadap Larva Udang *Artemia salina* Leach dalam 24 jam

WAKTU	ULANGAN I					ULANGAN II					ULANGAN III							
	P0	P1	P2	P3	P4	P5	P0	P1	P2	P3	P4	P5	P0	P1	P2	P3	P4	P5
09.00 – 10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.00 – 11.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
11.00 – 12.00	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	1	-
12.00 – 13.00	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-	1	-	-
13.00 – 14.00	-	-	-	-	-	1	-	1	-	-	1	-	-	1	1	-	1	1
14.00 – 15.00	-	-	1	-	1	2	-	1	-	1	-	1	-	-	-	1	-	-
15.00 – 16.00	-	1	1	1	-	-	-	-	1	-	-	-	-	-	2	-	-	1
16.00 – 17.00	-	1	-	1	-	1	-	1	-	-	2	-	-	2	-	1	1	-
17.00 – 18.00	-	1	2	-	-	1	-	-	-	1	-	-	-	1	-	-	-	2
18.00 – 19.00	-	-	-	1	1	-	-	-	-	1	2	1	-	-	1	-	1	-
19.00 – 20.00	-	-	2	-	-	1	-	-	1	-	-	-	-	1	-	1	-	1
20.00 – 21.00	-	1	-	-	-	1	-	1	-	-	1	1	-	-	-	-	1	-
21.00 – 22.00	-	-	-	1	1	-	-	-	-	1	-	-	-	-	1	2	-	2
22.00 – 23.00	-	1	1	-	-	1	-	1	2	-	1	1	-	-	-	-	2	-
23.00 – 00.00	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-
00.00 – 00.30	-	1	-	-	2	-	-	-	-	2	2	1	-	-	-	1	-	-
00.30 – 01.30	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	1	-
01.30 – 02.30	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
02.30 – 03.30	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1
03.30 – 04.30	-	-	-	1	-	-	-	-	1	-	-	2	-	-	2	-	-	-
04.30 – 05.30	-	1	1	-	-	2	-	1	-	1	-	-	-	-	-	1	1	2
05.30 – 06.30	-	-	-	-	1	1	-	-	1	-	1	-	-	1	-	-	-	-
06.30 – 07.30	-	-	1	1	-	-	-	1	-	-	-	1	-	-	1	1	-	-
07.30 – 08.30	-	1	-	1	1	1	-	-	-	1	1	1	-	1	1	-	2	1
Jumlah Larva																		
Mati	0	8	9	9	9	12	0	8	7	10	11	12	0	8	10	9	11	12

Lampiran 10. Rancangan Acak Lengkap (RAL) Data Hasil Full Scale Test

Konsentrasi	Jumlah Larva tiap petri	ULANGAN			Larva Mati (Mortalitas)	Rata-rata Mortalitas
		I	II	III		
P0 (kontrol)	20	0	0	0	0	0
P1 (4%)	20	8	8	8	24	8
P2 (4,5%)	20	9	7	10	26	8,7
P3 (5%)	20	9	10	9	28	9,3
P4 (5,5%)	20	9	11	11	31	10,3
P5 (6%)	20	12	12	10	34	11,3
Total =					143	

$$CF = FK = \frac{\text{Grand total}^2}{\text{Jumlah data}} = \frac{143^2}{18} = 1136,05$$

$$\begin{aligned}
 JK_{\text{Total}} &= \sum y_i^2 - FK \\
 &= 0^2 + 0^2 + 0^2 + 8^2 + 8^2 + 8^2 + 9^2 + 7^2 + 10^2 + 9^2 + 10^2 + 9^2 + 9^2 + 11^2 + 11^2 + \\
 &\quad 12^2 + 12^2 + 10^2 - 1136,05 \\
 &= 1395 - 1136,05 \\
 &= 258,95
 \end{aligned}$$

$$\begin{aligned}
 JK_{\text{Perlakuan}} &= \frac{\sum T^2}{\text{Ulangan}} - FK = \frac{0^2 + 24^2 + 26^2 + 28^2 + 31^2 + 34^2}{3} - 1136,05 \\
 &= \frac{4153}{3} - 1136,05 \\
 &= 248,25
 \end{aligned}$$

$$\begin{aligned}
 JK_{\text{Galat}} &= JK_{\text{Total}} - JK_{\text{perlakuan}} = 258,95 - 248,25 \\
 &= 10,7
 \end{aligned}$$

Lampiran 11. Perhitungan ANOVA dan LSD Data Hasil Full Scale Test

A. ANOVA

Sumber Variasi	Df	SS	MS	F _{hitung}	F _{tabel}	
					0,05	0,01
6 Konsentrasi	5	248,25	49,65	55,78	3,11	5,06
Galat	12	10,7	0,89			
Total	17					

F_{hitung} ≥ F_{tabel} Maka Ada Beda Nyata

B. LSD

$$LSD \alpha = t \alpha (\text{db galat}) \times \sqrt{\frac{2 \cdot \text{KT galat}}{\text{Ulangan}}}$$

$$\begin{aligned}
 LSD_{0,05} &= 0,05 (12) \times \sqrt{\frac{2 \cdot 0,89}{3}} \\
 &= 2,179 \times \sqrt{0,593} \\
 &= 2,179 \times 0,77 \\
 &= 1,67
 \end{aligned}$$

Rank	Mean Name	Mean	n Non-significant ranges
1	P5	11.3	a
2	P4	10.3	ab
3	P3	9.3	b
4	P2	8.7	b
5	P1	8.0	b
6	P0	0.0	c

Lampiran 12. Perhitungan Korelasi dan Regresi Data Hasil Full Scale Test

NO.	Konsentrasi (x)	Mortalitas (y)	x^2	y^2	Xy
1	0	0	0	0	0
2	4	8	16	64	32
3	4,5	8,7	20,25	75,69	39,15
4	5	9,3	25	86,49	46,5
5	5,5	10,3	30,25	106,09	56,65
6	6	11,3	36	127,69	67,8
$\sum x = 25$ $\bar{X} = 4,16$		$\sum y = 47,6$ $\bar{Y} = 7,9$	$\sum x^2 = 127,5$	$\sum y^2 = 459,96$	$\sum xy = 242,1$

A. Korelasi

$$r = \frac{[\sum xy - \frac{\sum x \cdot \sum y}{n}]^2}{(\sum x^2 - \frac{\sum x^2}{n})^2 (\sum y^2 - \frac{\sum y^2}{n})^2}$$

$$r = \frac{[242,1 - \frac{25 \cdot 47,6}{6}]^2}{(127,5 - \frac{25^2}{6})^2 (459,96 - \frac{47,6^2}{6})^2}$$

$$r = \frac{[242,1 - 198,3]^2}{(127,5 - 104,16) (459,96 - 377,6)}$$

$$r = \frac{[43,8]^2}{(23,34) (82,36)}$$

$$r = \sqrt{\frac{1918,4}{1922,3}}$$

$$r = \sqrt{0,997}$$

$$r = 0,99$$

B. Regresi

$$y = a + bx$$

$$a = \bar{y} - b\bar{x}$$

$$b = \frac{\sum xy - \frac{\sum x \cdot \sum y}{n}}{\sum x^2 - \left(\frac{\sum x}{n}\right)^2}$$

$$= \frac{\left[242,1 - \frac{25 \cdot 47,6}{6} \right]}{\left(127,5 - \frac{25}{6} \right)^2}$$

$$= \frac{[242,1 - 198,3]}{(127,5 - 104,16)}$$

$$= \frac{43,8}{23,34}$$

$$= 1,87$$

$$a = \bar{y} - b\bar{x}$$

$$= 7,9 - 1,87 \cdot 4,16$$

$$= 7,9 - 7,8$$

$$= 0,1$$

$$y = a + bx$$

$$= 0,1 + 1,87x$$

$$= 1,87x + 0,1$$

Potongan sumbu $y \Rightarrow x = 0$

$$y = 1,87x + 0,1$$

$$y = 1,87(0) + 0,1$$

$$y = 0,1$$

Potongan sumbu $x \Rightarrow y = 0$

$$y = 1,87x + 0,1$$

$$0 = 1,87x + 0,1$$

$$0,1 = 1,87x$$

$$x = \frac{0,1}{1,87}$$

$$x = 0,05$$

Sedangkan jika $y = 10$

$$y = 0,1 + 1,87x$$

$$10 = 0,1 + 1,87x$$

$$0,1 + 1,87x = 10$$

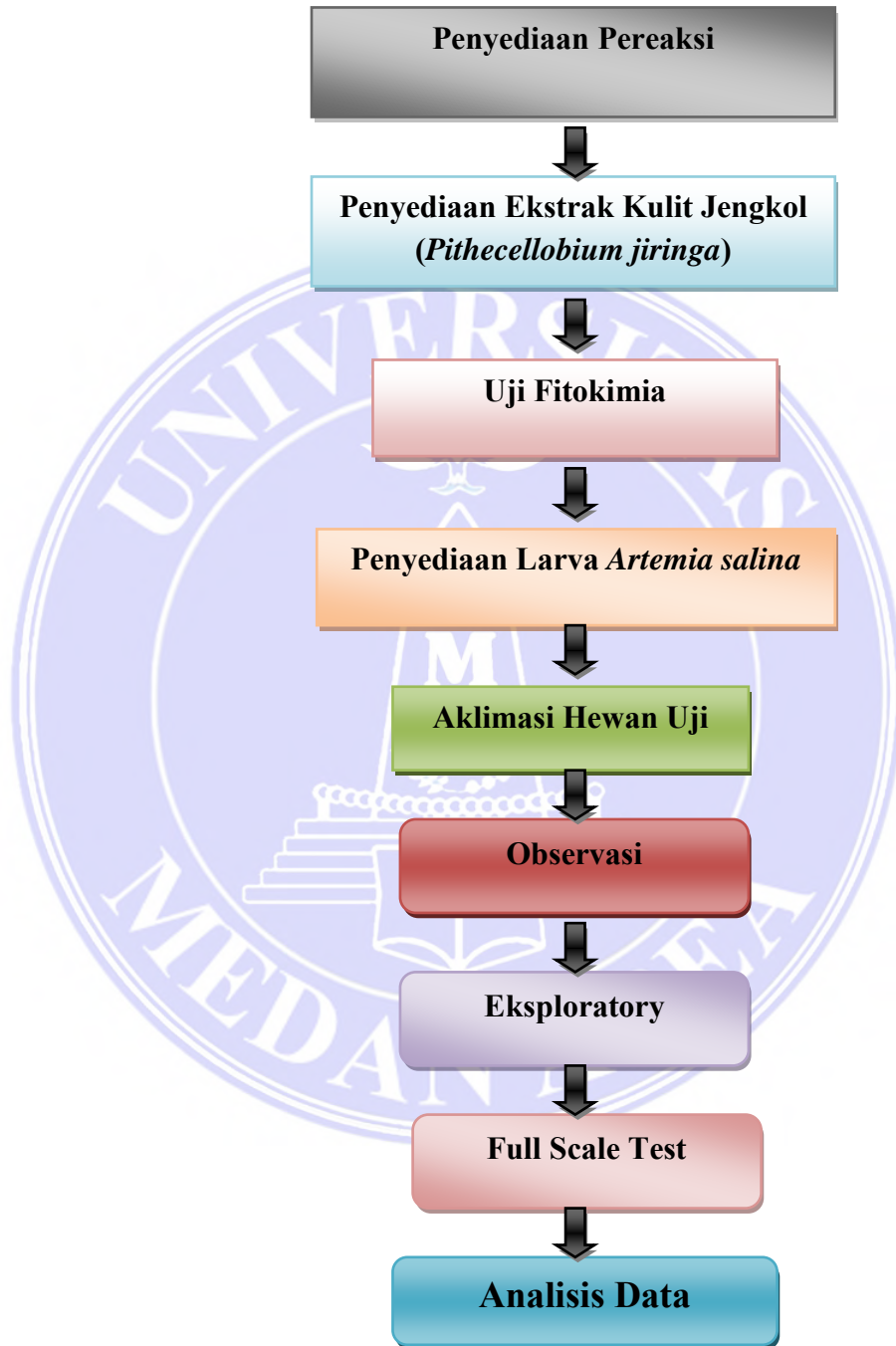
$$1,87x = 10 - 0,1$$

$$1,87x = 9,9$$

$$x = \frac{9,9}{1,87}$$

x = 5,29

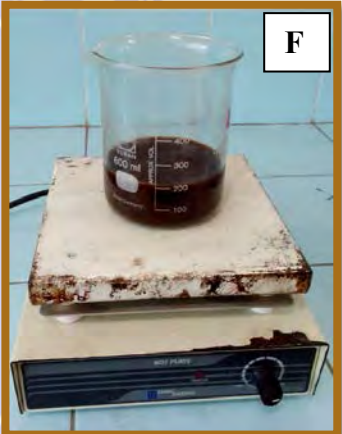
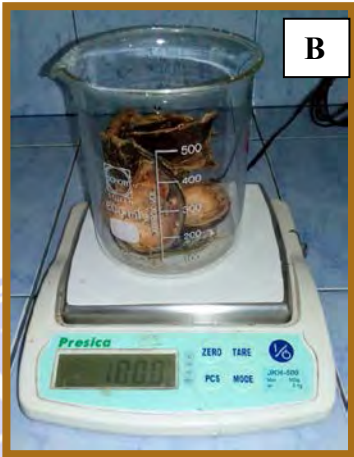
Lampiran 13. Skema Penelitian

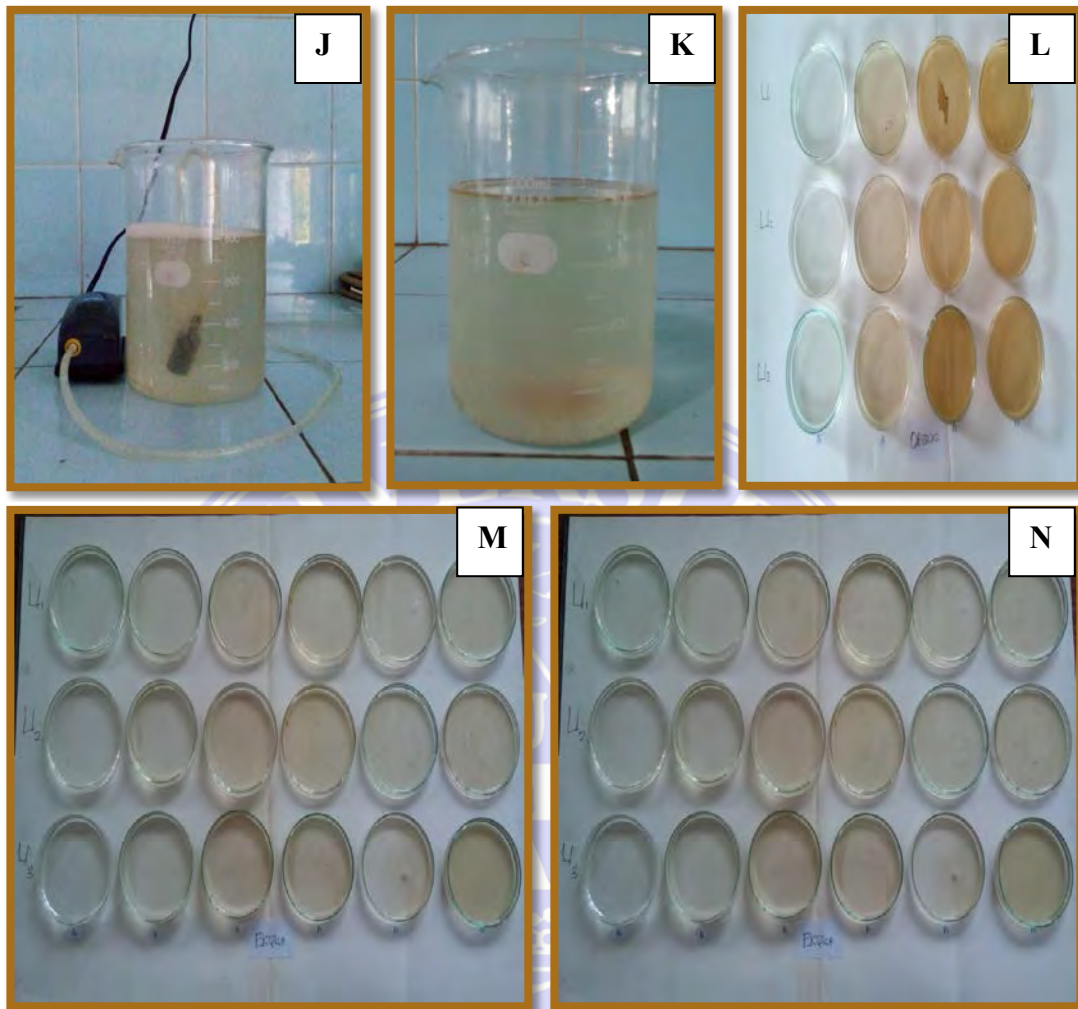


Lampiran 14. Surat Keterangan Selesai Riset Penelitian



Lampiran 15. Kegiatan Penelitian





Keterangan : Gambar 2. Proses Prosedur Kerja ; A; Kulit Jengkol Segar, B; Kulit Jengkol Ditimbang 100 gr, C; Kulit Jengkol Dipotong Kecil, D; Kulit Jengkol Dikeringkan/Dijemur, E; Bubuk Kulit Jengkol Dimaserasi Dengan Pelarut Metanol Selama 24 jam, F; Pelarut Metanol Diuapkan, G; Penambahan Aquades 100 mL Dan Diendapkan Selama 1 jam, H; Ekstrak Disaring, I; Garam Tidak Beriodium Ditimbang Sebanyak 100 gr, J; Penetasan Larva *Artemia salina*, K; Aklimasi Larva *Artemia salina*, L; Tahap Observasi, M; Tahap Eksploratory, N; Tahap full scale test.