

## LAMPIRAN

## Lampiran 1. Perhitungan Dosis Ovaprim

Berat induk jantan = 5488

$$= 5488 \times 0,28$$

$$= 1536,64 \text{ gram}$$

$$= 1,53 \text{ kg}$$

Berat induk betina = 9598

$$= 9598 \times 0,28$$

$$= 2687,44 \text{ gram}$$

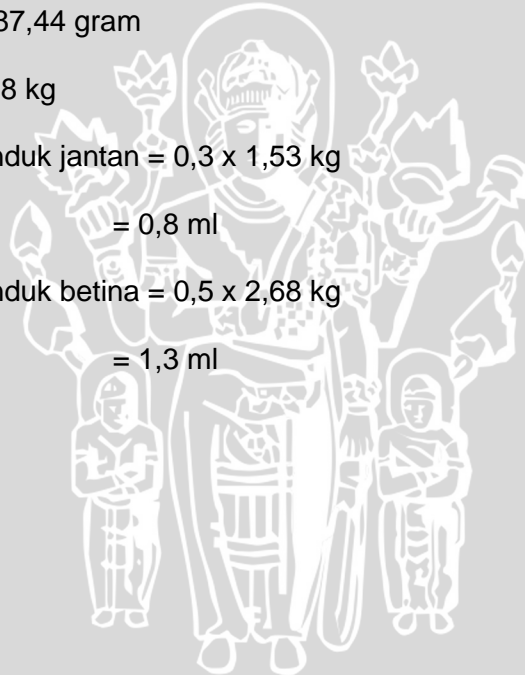
$$= 2,68 \text{ kg}$$

Dosis ovaprim untuk induk jantan =  $0,3 \times 1,53 \text{ kg}$

$$= 0,8 \text{ ml}$$

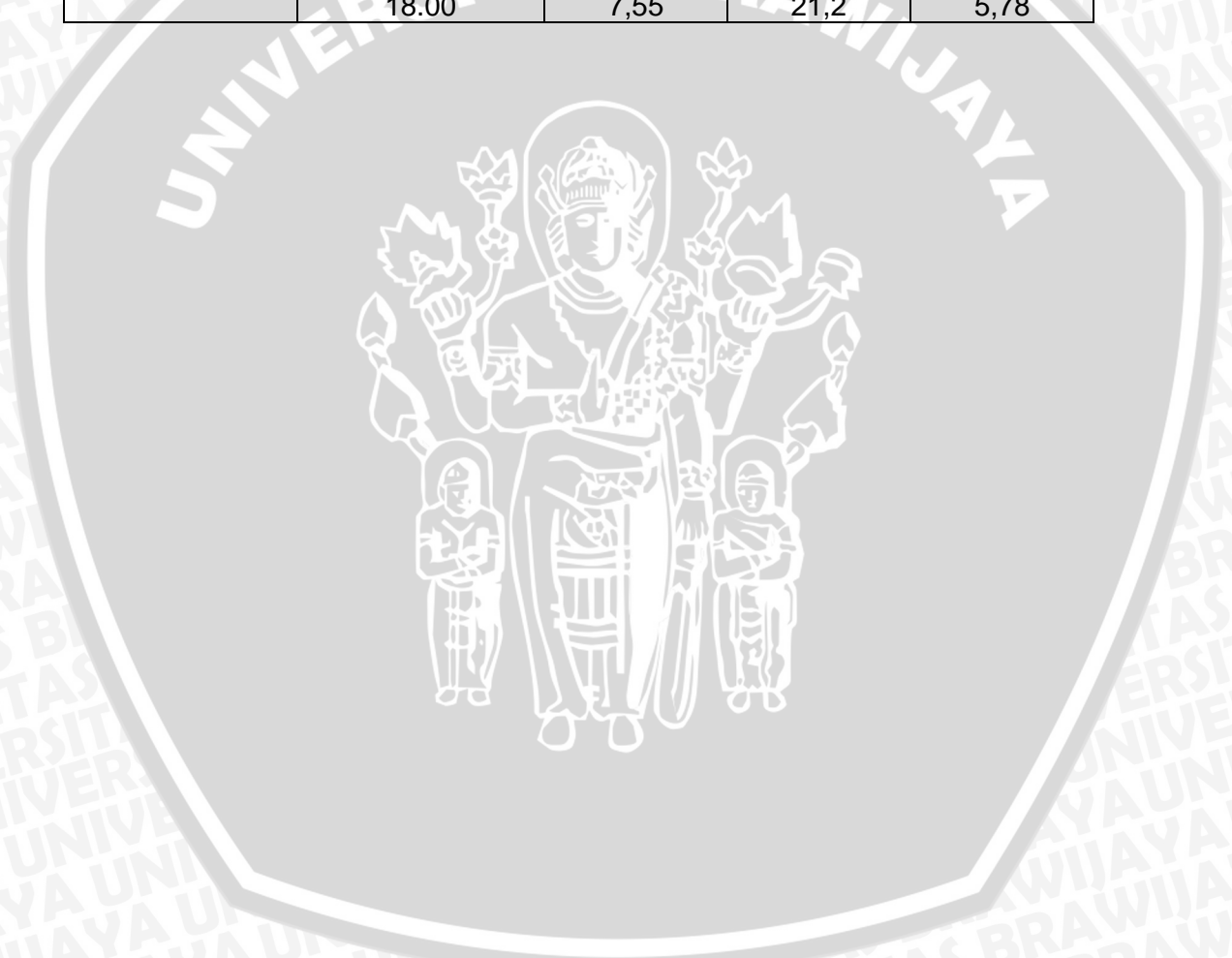
Dosis ovaprim untuk induk betina =  $0,5 \times 2,68 \text{ kg}$

$$= 1,3 \text{ ml}$$



## Lampiran 2. Data Kualitas Air

Hari	Pukul	Kualitas Air		
		pH	Suhu (°C)	DO (ppm)
Kamis	07.00	7,19	21,5	5,72
	12.00	7,21	22,5	5,76
	18.00	7,28	20,6	5,81
Jumat	07.00	7,32	21,6	5,81
	12.00	7,34	22,7	5,84
	18.00	7,36	21,9	5,79
Sabtu	07.00	7,42	21,0	5,77
	12.00	7,45	22,0	5,80
	18.00	7,48	20,1	5,82
Minggu	07.00	7,51	21,1	5,81
	12.00	7,54	22,2	5,80
	18.00	7,55	21,2	5,78

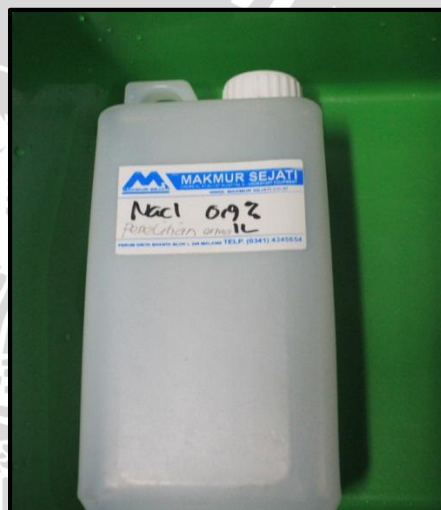


Lampiran 3. Proses Penimbangan, Penyuntikan, dan *Stripping* Induk

Penimbangan Induk



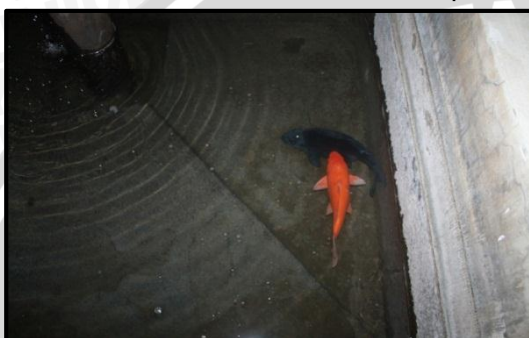
Pembuatan Ovaprim



Penyuntikan Induk



Reaksi Induk setelah Disuntik Ovaprim dan Dipasangkan



Malam hari



Pagi hari

Stripping Induk



Telur



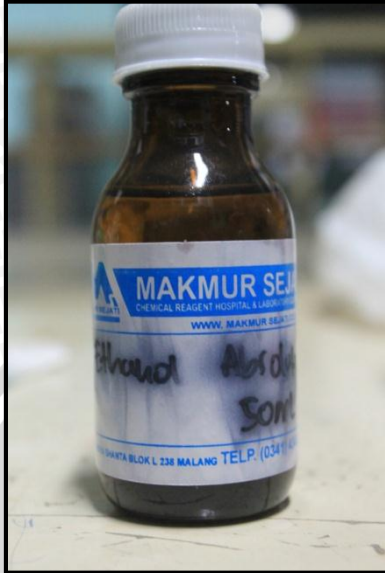
Sperma



Lampiran 4. Perendaman Etanol 7% dan Kejutan Suhu 40°C

Pembuatan Etanol 7%

Etanol Absolut



Akuades



Memasukkan akuades 93ml ke dalam botol



Pengambilan etanol sebanyak 7ml dengan spuit



Penyuntikan etanol 7ml ke dalam botol berisi akuades 93ml dan dihomogenkan.



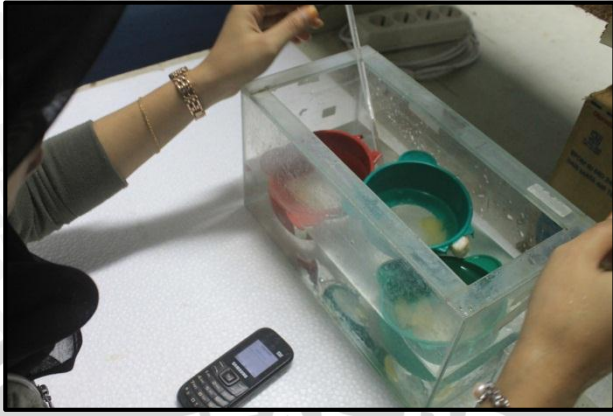
Pembuatan Kejutan Suhu 40°C



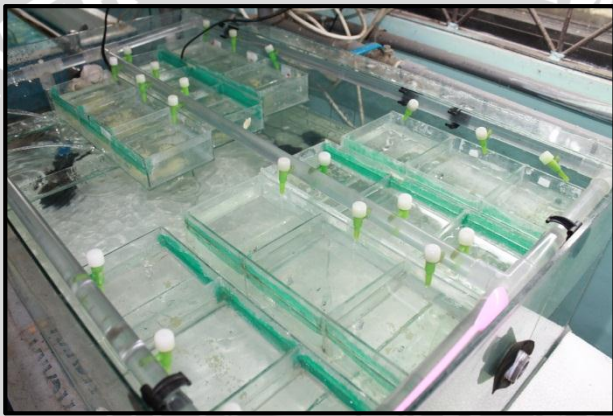
Perendaman Etanol 7%



Kejutn Suhu 40°C



Inkubasi



Lampiran 5. Pengontrolan Kualitas Air

Pengukuran pH



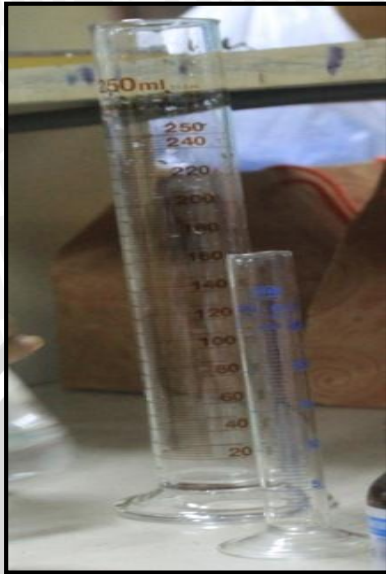
Pengukuran DO dan Suhu





Lampiran 6. Alat dan Bahan Penelitian

Gelas Ukur



Aluminium foil



Baskom



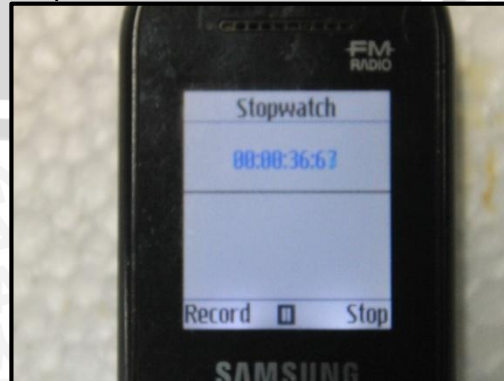
Bulu Burung Dara



Sput



Stopwatch



Aerasi



Akuarium



Handtally counter



Heater



Saringanteh



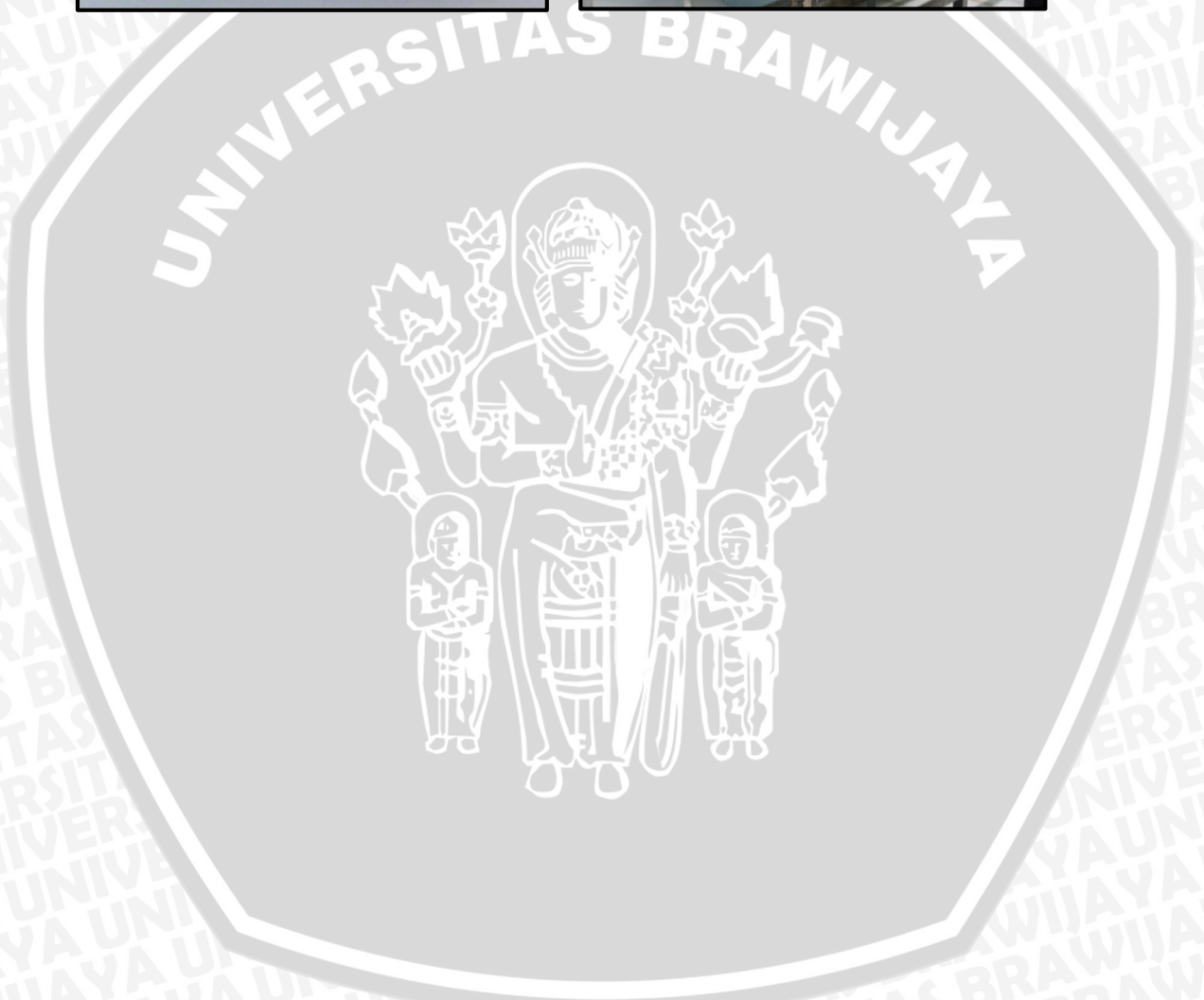
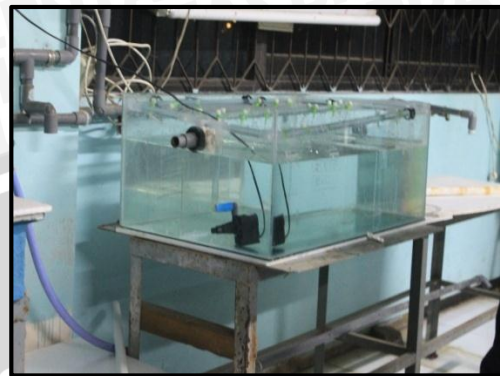
Mikroskop Cahaya



Kamera



Inkubator



Lampiran 7. Perhitungan Data Aktivasi Sel Telur

Perlakuan	Ulangan			Total	Rata-Rata
	1	2	3		
A	99,25	98,95	99,85	298,05	99,35
B	98,74	97,85	98,25	294,84	98,28
C	97,75	96,95	97,35	292,05	97,35
D	95,45	94,95	95,85	286,25	95,42
E	92,75	93,65	92,85	279,25	93,08
<b>Total</b>				1450,44	
<b>Kontrol -</b>	0	0	0	0	0
<b>Kontrol +</b>	99,89	99,68	99,46	299,03	99,68

One-Sample Kolmogorov-Smirnov Test

		VAR00001
N		15
Normal Parameters <sup>a</sup>	Mean	3.0000
	Std. Deviation	1.46385
Most Extreme Differences	Absolute	.153
	Positive	.153
	Negative	-.153
Kolmogorov-Smirnov Z		.592
Asymp. Sig. (2-tailed)		.875

a. Test distribution is Normal.

Uji Sidik Ragam

Sumber Keragaman	db	JK	KT	F Hitung	F 5%	F 1%
Perlakuan	4	74	18,5	92,5	3,48	5,99
Acak	10	2	0,2			
<b>Total</b>	14	76				

$$\text{Faktor Koreksi} = \frac{\text{Total}^2}{\sum \text{perlakuan}} = \frac{1.450,44^2}{15} = 140.251,75$$

$$\begin{aligned} \text{JK total} &= (A1^2+A2^2+A3^2+B1^2+B2^2+B3^2+C1^2+C2^2+C3^2+D1^2+D2^2+D3^2+E1^2+E2^2 \\ &\quad +E3^2) - \text{FK} \\ &= 140.327,75 - 140.251,75 \\ &= 76 \end{aligned}$$

$$\begin{aligned}
 \text{JK perlakuan} &= \frac{(\sum A^2 + \sum B^2 + \sum C^2 + \sum D^2 + \sum E^2)}{3} - \text{FK} \\
 &= \frac{420.977,25}{3} - 140.251,75 \\
 &= 140.325,75 - 140.251,75 \\
 &= 74
 \end{aligned}$$

$$\text{JK acak} = \text{JK total} - \text{JK perlakuan} = 76 - 74 = 2$$

$$\text{KT perlakuan} = \frac{\text{JK perlakuan}}{\text{db}} = \frac{74}{4} = 18,5$$

$$\text{KT acak} = \frac{\text{JK acak}}{\text{db}} = \frac{2}{10} = 0,2$$

$$F \text{ hitung} = \frac{\text{KT perlakuan}}{\text{KT acak}} = \frac{18,50}{0,20} = 92,5$$

$$F 5\% = 3,48 \quad F 1\% = 5,99$$

F hitung lebih besar dari F 1% dan F 5%, sehingga dilanjutkan dengan uji beda nyata terkecil (BNT)

Uji BNT

$$\text{SED} = \sqrt{\frac{2 \times \text{KT acak}}{\sum \text{ulangan}}} = \sqrt{\frac{2 \times 0,20}{3}} = 0,37$$

$$\text{BNT } 5\% = \text{db acak t tabel} \times \text{SED} = 1,81 \times 0,37 = 0,67$$

$$\text{BNT } 1\% = \text{db acak t tabel} \times \text{SED} = 2,76 \times 0,37 = 1,02$$

Notasi

Perlakuan		E	D	C	B	A	Notasi
Rata-rata		93,08	95,42	97,35	98,28	99,35	
E	93,08	-	-	-	-	-	a
D	95,42	2,34**	-	-	-	-	b
C	97,35	4,27**	1,93**	-	-	-	c
B	98,28	5,20**	2,86**	0,93*	-	-	d
A	99,35	6,27**	3,98**	2,**	1,07**	-	e

## Uji Polinomial Orthogonal

Perlakuan	Total (Ti)	Pembanding (Ci)		
		Linier	Kuadratik	Kubik
E	279,25	-3	1	-1
D	286,25	-1	-1	3
C	292,05	0	0	0
B	294,84	1	-1	-3
A	298,05	3	1	1
<b>Q = Σ Ti*Ci</b>		64,99	-3,79	-6,97
<b>Kr = Σ Ci^2 * r</b>		60	12	60
<b>JK = Q^2/Kr</b>		70,40	1,20	0,81
Total JK Regresi		72,40		

Sumber Keragaman	db	JK	KT	F hit	F 5%	F 1%
Perlakuan	4	74,01	18,50	91	3,48	5,99
Linier	1	70,40	70,40	346,65	3,48	5,99
Kuadratik	1	1,20	1,20	5,89	3,48	5,99
Kubik	1	0,81	0,81	3,99	3,48	5,99
Acak	10	2	0,2			
Total	14	76,04				

$$KT \text{ linier} = \frac{JK \text{ linier}}{db \text{ linier}} = \frac{70,40}{1} = 70,40$$

$$KT \text{ kuadratik} = \frac{JK \text{ kuadratik}}{db \text{ kuadratik}} = \frac{1,20}{1} = 1,20$$

$$KT \text{ kubik} = \frac{JK \text{ kubik}}{db \text{ kubik}} = \frac{0,81}{1} = 0,81$$

$$F \text{ hitung linier} = \frac{KT \text{ linier}}{KT \text{ acak}} = \frac{70,40}{0,2} = 346,65$$

$$F \text{ hitung kuadratik} = \frac{KT \text{ kuadratik}}{KT \text{ acak}} = \frac{1,20}{0,2} = 5,89$$

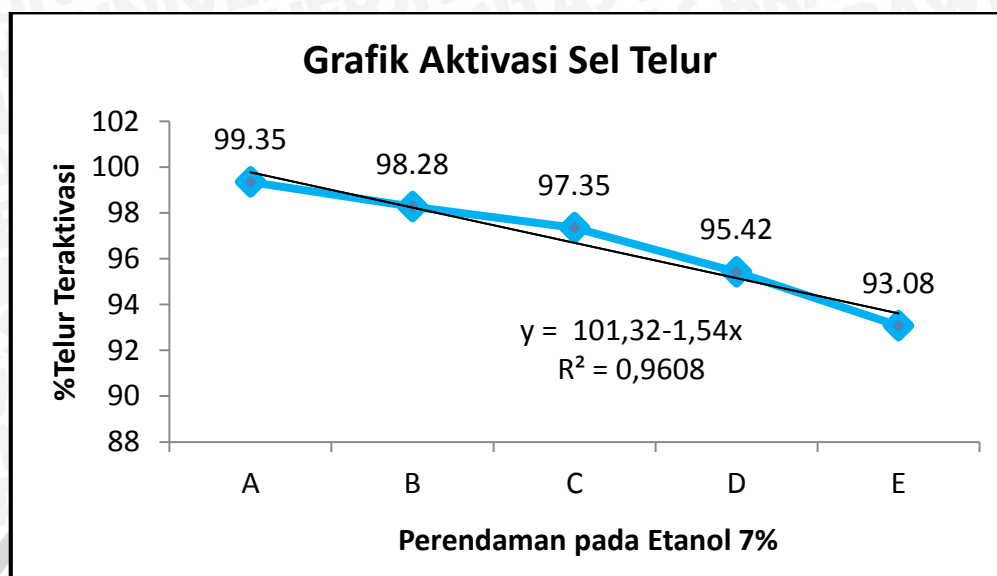
$$F \text{ hitung kubik} = \frac{KT \text{ kubik}}{KT \text{ acak}} = \frac{0,81}{0,2} = 3,99$$

$$r^2 \text{ linier} = \frac{JK \text{ linier}}{JK \text{ linier} + JK \text{ acak}} = \frac{70,40}{70,40 + 2} = 0,97$$

$$r^2 \text{ kuadratik} = \frac{JK \text{ kuadratik}}{JK \text{ kuadratik} + JK \text{ acak}} = \frac{1,20}{1,20 + 2} = 0,37$$

$$r^2 \text{ kubik} = \frac{JK \text{ kubik}}{JK \text{ kubik} + JK \text{ acak}} = \frac{0,81}{0,81 + 2} = 0,29$$

Nilai regresi linier lebih besar dari nilai regresi kuadratik dan regresi kubik.



Lampiran 8. Perhitungan Data Perkembangan Sel Telur

Perlakuan	Ulangan			Total	Rata-Rata
	1	2	3		
A	53,89	55,95	53,23	163,07	54,36
B	23,23	22,86	21,56	67,65	22,55
C	3,68	2,92	3,23	9,83	3,28
D	0,17	0,76	0,46	1,39	0,46
E	0,35	0,17	0,17	0,69	0,23
<b>Total</b>				242,63	
<b>Kontrol -</b>	0	0	0	0	0
<b>Kontrol +</b>	87,12	82,29	77,08	246,49	82,16

One-Sample Kolmogorov-Smirnov Test

		VAR00001
N		15
Normal Parameters <sup>a</sup>	Mean	3.0000
	Std. Deviation	1.46385
Most Extreme Differences	Absolute	.153
	Positive	.153
	Negative	-.153
Kolmogorov-Smirnov Z		.592
Asymp. Sig. (2-tailed)		.875

a. Test distribution is Normal.

Uji Sidik Ragam

Sumber Keragaman	db	JK	KT	F Hitung	F 5%	F 1%
Perlakuan	4	6.497,84	1.624,46	2.684,08	3,48	5,99
Acak	10	6,05	0,61			
<b>Total</b>	14	6.503,89				

$$\text{Faktor Koreksi} = \frac{\text{Total}^2}{\sum \text{perlakuan}} = \frac{242,63^2}{15} = 3.942,62$$

$$\begin{aligned} \text{JK total} &= (A^2+A^2+A^2+B^2+B^2+B^2+C^2+C^2+C^2+D^2+D^2+D^2+E^2+E^2 \\ &\quad +E^2) - \text{FK} \\ &= 10.442,3 - 3.924,62 \\ &= 6.503,89 \end{aligned}$$

$$\text{JK perlakuan} = \frac{(\sum A^2 + \sum B^2 + \sum C^2 + \sum D^2 + \sum E^2)}{3} - \text{FK}$$



$$= \frac{31.267,39}{3} - 3.924,62$$

$$= 10.422,46 - 3.924,62$$

$$= 6.497,84$$

$$JK \text{ acak} = JK \text{ total} - JK \text{ perlakuan} = 6.503,89 - 6.497,84 = 6,05$$

$$KT \text{ perlakuan} = \frac{JK \text{ perlakuan}}{db} = \frac{6.497,84}{4} = 1.624,46$$

$$KT \text{ acak} = \frac{JK \text{ acak}}{db} = \frac{6,05}{10} = 0,61$$

$$F \text{ hitung} = \frac{KT \text{ perlakuan}}{KT \text{ acak}} = \frac{1.624,46}{0,61} = 2.684,08$$

$$F \text{ 5\%} = 3,48 \quad F \text{ 1\%} = 5,99$$

F hitung lebih besar dari F 1% dan F 5%, sehingga dilanjutkan dengan uji beda nyata terkecil (BNT)

Uji BNT

$$SED = \sqrt{\frac{2 \times KT \text{ acak}}{\sum \text{ulangan}}} = \sqrt{\frac{2 \times 0,61}{3}} = 0,64$$

$$BNT \text{ 5\%} = db \text{ acak } t \text{ tabel} \times SED = 1,81 \times 0,64 = 1,15$$

$$BNT \text{ 1\%} = db \text{ acak } t \text{ tabel} \times SED = 2,76 \times 0,64 = 1,76$$

Notasi

Perlakuan	E	D	C	B	A	Notasi
Rata-rata	0,23	0,46	3,28	22,55	54,36	
E	0,23	-	-	-	-	a
D	0,46	0,23 <sup>ns</sup>	-	-	-	a
C	3,28	3,05 <sup>**</sup>	2,82 <sup>**</sup>	-	-	b
B	22,55	22,32 <sup>**</sup>	21,86 <sup>**</sup>	19,27 <sup>**</sup>	-	c
A	54,36	54,13 <sup>**</sup>	53,9 <sup>**</sup>	51,08 <sup>**</sup>	31,81 <sup>**</sup>	d

## Uji Polinomial Orthogonal

Perlakuan	Total (Ti)	Pembanding (Ci)		
		Linier	Kuadratik	Kubik
E	0,69	-3	1	-1
D	1,39	-1	-1	3
C	9,83	0	0	0
B	67,65	1	-1	-3
A	163,07	3	1	1
<b>Q = Σ Ti*Ci</b>		219,15	57,12	41,64
<b>Kr = Σ Ci^2 * r</b>		60	12	60
<b>JK = Q^2/Kr</b>		800,45	271,89	28,90
Total JK Regresi		1101,23		

Sumber Keragaman	db	JK	KT	F hit	F 5%	F 1%
Perlakuan	4	6497,84	1624,46	2684	3,48	5,99
Linier	1	800,45	800,45	1322,57	3,48	5,99
Kuadratik	1	271,89	271,89	449,24	3,48	5,99
Kubik	1	28,90	28,90	47,75	3,48	5,99
Acak	10	6,05	0,61			
Total	14	6503,89				

$$KT \text{ linier} = \frac{JK \text{ linier}}{db \text{ linier}} = \frac{800,45}{1} = 800,45$$

$$KT \text{ kuadratik} = \frac{JK \text{ kuadratik}}{db \text{ kuadratik}} = \frac{271,89}{1} = 271,89$$

$$KT \text{ kubik} = \frac{JK \text{ kubik}}{db \text{ kubik}} = \frac{28,90}{1} = 28,90$$

$$F \text{ hitung linier} = \frac{KT \text{ linier}}{KT \text{ acak}} = \frac{800,45}{0,61} = 1322,57$$

$$F \text{ hitung kuadratik} = \frac{KT \text{ kuadratik}}{KT \text{ acak}} = \frac{271,89}{0,61} = 449,24$$

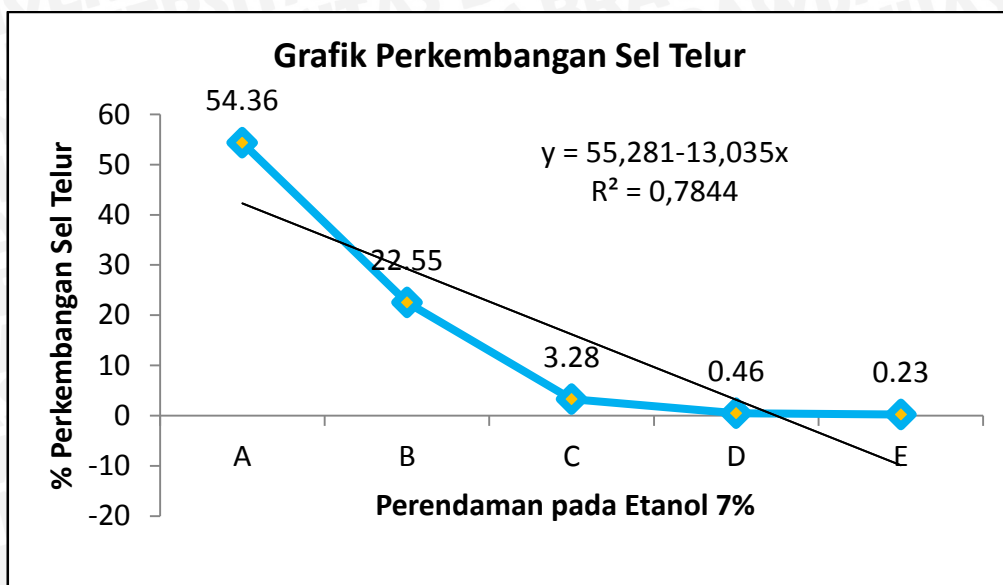
$$F \text{ hitung kubik} = \frac{KT \text{ kubik}}{KT \text{ acak}} = \frac{28,90}{0,61} = 47,75$$

$$r^2 \text{ linier} = \frac{JK \text{ linier}}{JK \text{ linier} + JK \text{ acak}} = \frac{800,45}{800,45 + 6,05} = 0,99$$

$$r^2 \text{ kuadratik} = \frac{JK \text{ kuadratik}}{JK \text{ kuadratik} + JK \text{ acak}} = \frac{271,89}{271,89 + 6,05} = 0,98$$

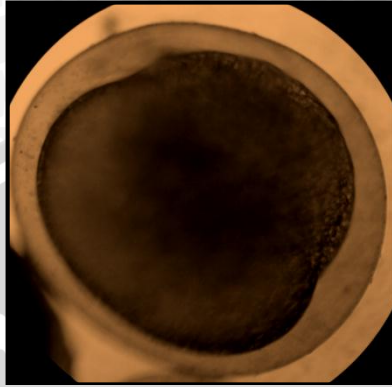
$$r^2 \text{ kubik} = \frac{JK \text{ kubik}}{JK \text{ kubik} + JK \text{ acak}} = \frac{28,90}{28,90 + 6,05} = 0,83$$

Nilai regresi linier lebih besar dari nilai regresi kuadratik dan regresi kubik.

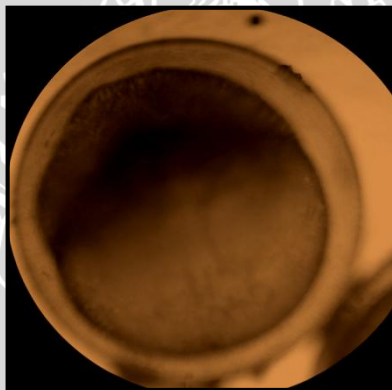


**Lampiran 9. Perkembangan Embrio Maksimal Tiap Perlakuan**

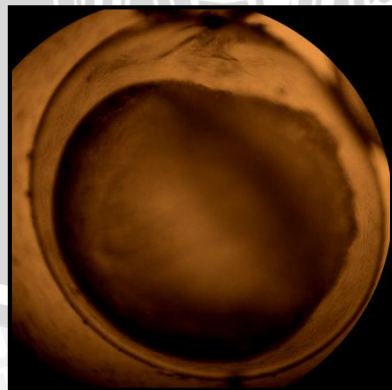
Perendaman etanol 7% selama 2 menit (fase blastula)



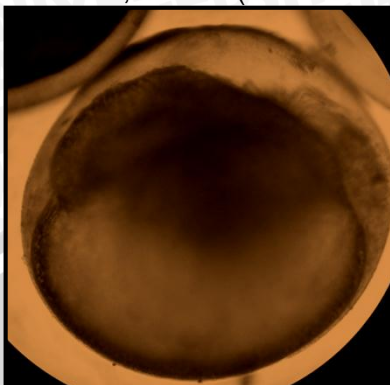
Perendaman etanol 7% selama 2,5 menit (fase morula akhir)



Perendaman etanol 7% selama 3 menit (fase morula awal)



Perendaman etanol 7% selama 3,5 menit (morula awal)



Perendaman etanol 7% selama 4 menit (kutub anima menonjol)

