

BAB V

KESIMPULAN DAN SARAN

A. Kesimpulan

1. Pemberian pakan daun murbei 60% dari berat total ulat akan lebih efektif, karena antara pemberian pakan 60% dan 80% mempunyai pertumbuhan dan berat kokon yang tidak beda nyata. Pada akhir penelitian perlakuan C (60%) rata-rata panjang ulat 6,58cm, berat ulat 7,238 gram, berat kokon dengan pupa 3,724 gram, berat kokon tanpa pupa 0,937 gram, perlakuan D (80%) rata-rata panjang ulat 6,54 cm, berat ulat 7,225 gram, berat kokon dengan pupa 3,801gram, berat kokon tanpa pupa 0,946 gram.
2. Periode instar ulat sutera terdiri dari 5 instar, waktu yang paling pendek untuk menyelesaikan periode instar terdapat pada perlakuan C (60%) dan perlakuan D (80%), sedangkan perlakuan A (20%) dan B (40%) waktunya lebih panjang. Perlakuan A (20%) rata-rata yang dibutuhkan untuk menyelesaikan periode instar 27,90 hari, perlakuan B (40%) 26,08 hari, perlakuan C (60%) 23,48 hari, perlakuan D (80%) 23,36 hari.
3. Perlakuan C (60%) dan perlakuan D (80%) prosentase untuk hidup lebih besar dibandingkan dengan perlakuan A (20%) dan perlakuan B (40%). Perlakuan A (20%) terdapat 5 ulat yang mati atau 20%, perlakuan B (40%) terdapat 2 ulat yang mati atau 8%, sedangkan perlakuan C (60%) dan D (80%) tidak ada ulat yang mati.

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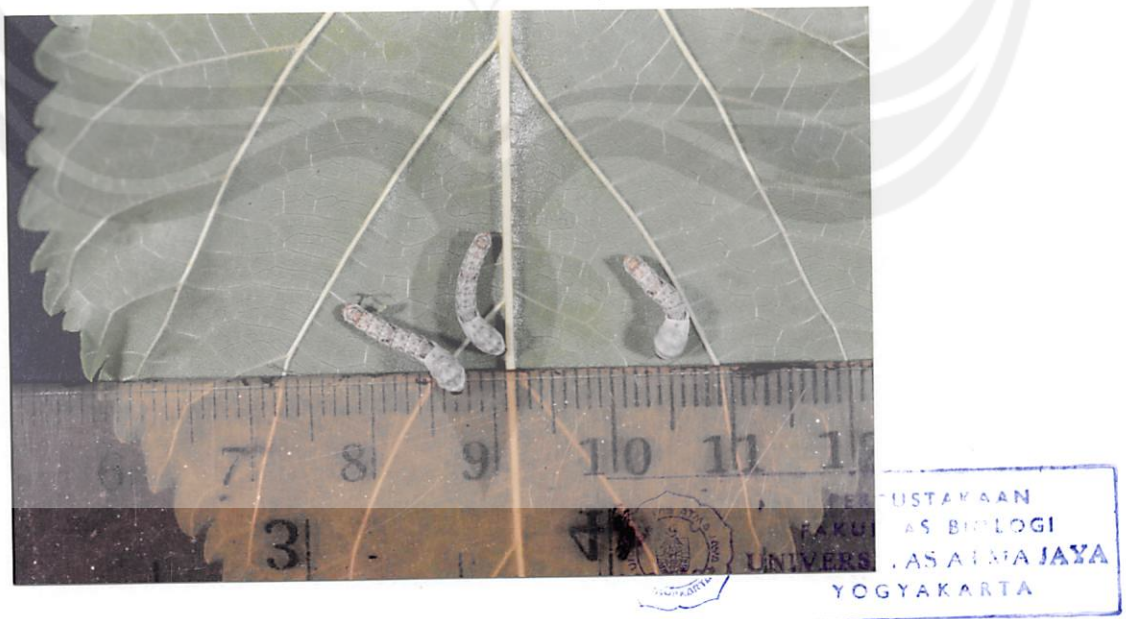
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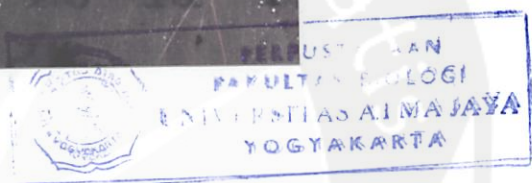
Lampiran 1. Ulat sutera (*Bombyx mori* L.) pada instar 1



Lampiran 2. Ulat sutera (*Bombyx mori* L.) pada instar 2



Lampiran 3. Ulat sutera (*Bombyx mori* L.) pada instar 3



Lampiran 4. Ulat sutera (*Bombyx mori* L.) pada instar 4



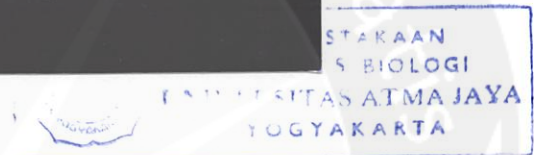
Lampiran 5. Ulat sutera (*Bombyx mori* L.) pada instar 5



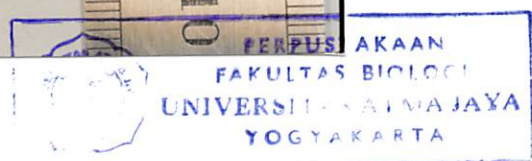
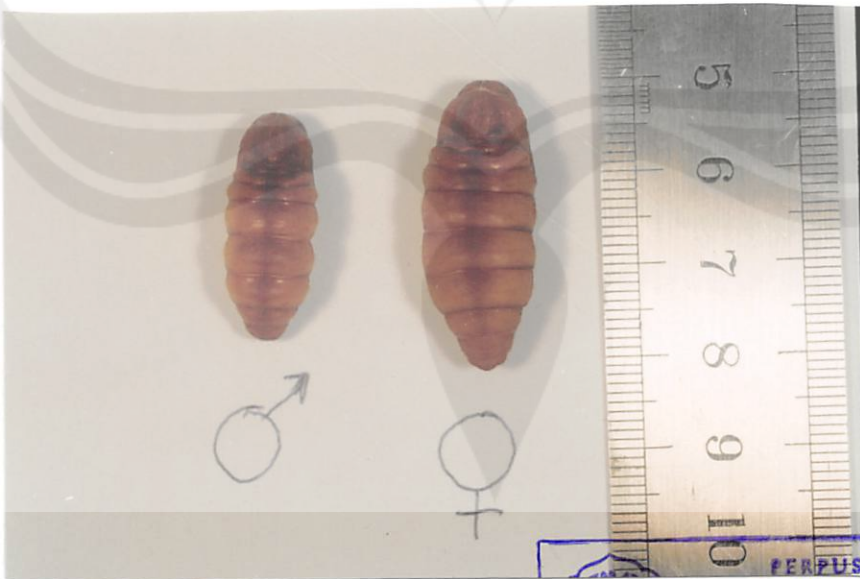
Lampiran 6. Ulat sutera (*Bombyx mori* L.) sedang membuat kokon



Lampiran 7. Kokon yang dihasilkan Ulat sutera (*Bombyx mori* L.)



Lampiran 8. Pupa jantan dan betina Ulat sutera (*Bombyx mori* L.)



Lampiran 9. Imago jantan dan betina Ulat sutera (*Bombyx mori* L.)



Lampiran 10. Perkawinan Ulat sutera (*Bombyx mori* L.)



Lampiran 11. Telur yang dihasilkan Ulat sutera (*Bombyx mori* L.)



Lampiran 12. Kokon yang sudah diulur dan siap untuk dipintal



Lampiran 13. Jumlah pakan yang diberikan pada tiap instar per perlakuan

Instar		Jumlah pakan (gr)			
		A	B	C	D
1	Total ulat	0,116	0,116	0,121	0,122
	Pakan yg diberikan	0,023	0,046	0,072	0,097
2	Total ulat	4,251	4,700	4,866	4,580
	Pakan yg diberikan	0,850	1,880	2,919	3,664
3	Total ulat	17,754	21,650	49,596	47,359
	Pakan yg diberikan	3,550	8,660	29,757	37,887
4	Total ulat	32,035	46,901	115,105	116,993
	Pakan yg diberikan	6,407	18,760	69,063	93,599
5	Total ulat	75,364	107,164	180,968	180,638
	Pakan yg diberikan	15,072	42,865	108,580	144,510

Lampiran 14. Tabel hasil pengamatan lamanya Ulat sutera (*Bombyx mori* L.) dalam menyelesaikan periode instar pada perlakuan A

ULANGAN	INSTAR					TOTAL
	1	2	3	4	5	
1	3	6	5	6	7	27
2	5	5	6	6	6	28
3	4	5	—	—	—	—
4	4	6	6	6	7	29
5	4	5	6	6	7	28
6	4	5	6	5	7	27
7	4	—	—	—	—	—
8	4	5	6	6	7	28
9	4	5	—	—	—	—
10	3	5	6	7	7	28
11	4	5	5	6	7	27
12	3	6	5	6	7	27
13	4	5	6	7	7	29
14	3	5	6	6	9	29
15	3	5	6	—	—	—
16	4	5	6	6	7	28
17	3	4	6	7	7	27
18	4	5	7	—	—	—
19	3	5	6	6	7	27
20	4	6	5	5	8	28
21	3	6	5	8	7	29
22	5	4	5	6	8	28
23	3	5	6	7	7	28
24	4	5	7	6	7	29
25	3	6	5	6	7	27
JML	92	124	120	124	143	558
Rerata	3,68	5,16	5,71	6,2	7,15	27,9

Lampiran 15. Tabel hasil pengamatan lamanya Ulat sutera (*Bombyx mori* L.) dalam menyelesaikan periode instar pada perlakuan B

ULANGAN	INSTAR					TOTAL
	1	2	3	4	5	
1	4	4	6	5	7	26
2	4	5	5	6	7	27
3	5	5	6	6	6	28
4	3	—	—	—	—	—
5	4	6	5	6	4	26
6	4	4	5	7	6	26
7	5	5	6	6	5	27
8	3	5	—	—	—	—
9	3	6	5	6	7	27
10	4	5	6	7	6	28
11	3	5	6	7	6	27
12	4	5	5	5	6	25
13	5	4	5	6	6	26
14	4	4	5	5	7	25
15	4	4	5	5	7	25
16	4	5	5	6	5	25
17	5	5	5	5	7	26
18	3	5	5	6	6	25
19	4	5	6	5	5	25
20	4	5	5	6	6	26
21	5	4	5	6	6	26
22	3	5	5	7	7	27
23	4	4	6	5	6	25
24	5	4	5	7	5	26
25	3	5	6	6	6	26
JML	99	113	123	136	139	600
Rerata	3,96	4,70	5,34	5,91	6,04	26,08

Lampiran 16. Tabel hasil pengamatan lamanya Ulat sutera (*Bombyx mori* L.) dalam menyelesaikan periode instar pada perlakuan C

ULANGAN	INSTAR					TOTAL
	1	2	3	4	5	
1	4	5	3	4	6	22
2	4	3	4	5	7	23
3	4	4	5	6	7	26
4	3	3	4	6	7	23
5	4	4	4	5	4	21
6	4	5	5	6	5	25
7	5	3	3	6	6	23
8	4	4	5	4	6	23
9	4	4	5	4	7	24
10	3	4	5	4	7	23
11	3	4	5	4	5	21
12	3	4	5	6	6	24
13	4	3	5	5	7	24
14	4	4	4	6	6	24
15	5	3	4	4	5	21
16	4	5	5	5	6	25
17	5	4	5	5	5	24
18	5	3	5	5	7	25
19	4	5	4	4	6	23
20	3	4	6	4	6	23
21	5	3	5	5	5	23
22	4	5	4	5	5	23
23	4	4	5	5	6	24
24	5	3	4	5	6	23
25	4	4	5	6	7	26
JML	101	97	114	124	150	587
Rerata	4,04	3,88	4,56	4,96	6	23,48

Lampiran 17. Tabel hasil pengamatan lamanya Ulat sutera (*Bombyx mori* L.) dalam menyelesaikan periode instar pada perlakuan D.

ULANGAN	INSTAR					TOTAL
	1	2	3	4	5	
1	4	4	5	6	7	26
2	5	3	4	5	6	23
3	4	4	4	4	6	22
4	4	5	4	5	5	23
5	5	3	5	5	5	23
6	3	4	6	4	6	23
7	4	5	4	4	6	23
8	5	3	5	5	7	25
9	4	5	5	5	5	24
10	5	4	5	5	6	25
11	5	3	4	4	5	21
12	5	4	3	4	6	22
13	4	3	4	5	7	23
14	4	4	5	6	7	26
15	3	3	4	6	7	23
16	4	4	4	5	4	21
17	4	5	5	6	5	25
18	5	3	3	6	6	23
19	4	4	5	4	6	23
20	4	4	5	4	7	24
21	3	4	5	4	7	23
22	4	3	4	5	5	21
23	4	3	5	6	6	24
24	3	4	5	5	7	24
25	4	4	4	6	6	24
JML	103	95	112	124	150	584
Rerata	4,12	3,8	4,48	4,96	6	23,36

Lampiran 18. Tabel hasil pengamatan panjang dan berat ulat sutera pada perlakuan A

UL	PANJANG ULAT					BERAT ULAT				
	1	2	3	4	5	1	2	3	4	5
1	0.3	0.9	2.3	2.8	4.2	0.005	0.179	0.979	1.945	4.316
2	0.4	0.8	2.1	2.9	3.6	0.004	0.178	0.901	1.603	3.597
3	0.3	0.7	-	-	-	0.005	0.165	-	-	-
4	0.4	0.9	1.5	2.3	3.6	0.005	0.174	0.881	1.432	3.604
5	0.4	1.0	1.3	2.4	3.7	0.005	0.182	0.779	1.420	3.545
6	0.4	0.7	1.2	3.0	4.2	0.006	0.249	0.885	2.029	4.381
7	0.3	-	-	-	-	0.004	-	-	-	-
8	0.4	0.7	1.7	2.9	4.1	0.005	0.174	0.903	1.986	3.741
9	0.5	0.7	-	-	-	0.004	0.181	-	-	-
10	0.4	1.2	1.8	2.9	3.8	0.006	0.169	0.810	1.419	3.771
11	0.5	0.9	1.3	2.5	4.1	0.005	0.187	0.791	1.834	3.947
12	0.4	0.8	1.6	2.7	4.1	0.005	0.169	0.871	1.775	3.874
13	0.3	1.0	1.4	2.5	3.5	0.005	0.167	0.710	1.216	3.471
14	0.3	0.7	1.6	2.7	3.6	0.004	0.171	0.798	1.413	3.541
15	0.3	0.8	1.2	-	-	0.004	0.141	0.670	-	-
16	0.3	0.9	1.7	2.8	3.7	0.005	0.169	0.813	1.519	3.601
17	0.4	0.8	1.3	2.6	4.2	0.005	0.194	1.031	2.059	4.031
18	0.4	0.7	-	-	-	0.004	0.154	-	-	-
19	0.3	0.8	1.5	2.7	4.0	0.005	0.174	0.945	1.314	3.897
20	0.4	1.0	1.9	2.6	3.8	0.004	0.174	0.771	1.613	3.703
21	0.4	0.8	1.6	2.4	3.4	0.004	0.163	0.815	1.516	3.416
22	0.3	0.9	1.7	2.5	3.6	0.004	0.169	0.721	1.345	3.743
23	0.4	0.8	1.9	2.8	3.7	0.004	0.174	0.765	1.241	3.669
24	0.3	0.9	1.5	2.7	3.7	0.004	0.169	0.881	1.341	3.542
25	0.4	0.7	1.7	2.8	4.2	0.005	0.225	1.034	2.015	3.974
JML	9.2	20.1	33.8	53.3	96	0.116	4.251	17.75	32.04	75.36
X	0.368	0.83	1.61	2.55	3.84	0.005	0.177	0.807	1.602	3.768

Lampiran 19. Tabel hasil pengamatan panjang dan berat ulat sutera pada perlakuan B

UL	PANJANG ULAT					BERAT ULAT				
	1	2	3	4	5	1	2	3	4	5
1	0.4	1.0	1.7	2.9	4.6	0.006	0.176	0.891	1.707	4.215
2	0.5	1.2	2.1	3.5	5.2	0.005	0.197	1.260	2.560	5.319
3	0.3	0.7	1.9	2.8	4.6	0.005	0.181	0.665	1.888	4.387
4	0.4	-	-	-	-	0.004	-	-	-	-
5	0.3	0.8	1.7	3.1	4.5	0.005	0.187	0.670	1.671	4.135
6	0.3	0.5	1.9	3.7	4.4	0.005	0.195	0.661	1.432	3.841
7	0.4	1.2	2.3	3.4	5.3	0.004	0.194	1.201	2.312	5.241
8	0.5	0.7	-	-	-	0.005	0.161	-	-	-
9	0.4	0.9	2.4	3.6	4.7	0.006	0.188	0.741	1.812	4.339
10	0.4	0.9	2.3	3.4	4.8	0.004	0.235	0.885	1.870	4.641
11	0.4	1.0	1.9	3.4	4.6	0.004	0.203	0.741	1.663	3.885
12	0.5	1.4	2.0	3.1	5.3	0.005	0.196	1.147	2.670	5.331
13	0.3	0.8	2.1	3.5	4.8	0.004	0.185	0.871	1.841	4.518
14	0.4	1.3	2.3	3.6	5.4	0.004	0.198	1.470	2.613	5.239
15	0.4	1.0	2.6	3.7	5.2	0.004	0.187	1.493	2.552	4.991
16	0.3	1.2	2.1	3.8	5.3	0.005	0.174	1.034	2.441	5.037
17	0.3	1.1	2.6	3.7	4.9	0.005	0.245	0.976	1.913	4.531
18	0.4	1.3	2.4	3.3	5.2	0.004	0.192	1.274	2.142	5.141
19	0.3	1.1	2.5	3.2	5.0	0.005	0.176	0.930	1.973	5.059
20	0.3	0.6	1.9	3.2	4.7	0.004	0.271	0.945	1.991	4.319
21	0.4	0.9	2.1	3.4	5.1	0.005	0.184	1.143	2.067	5.213
22	0.3	0.8	2.1	3.4	4.6	0.005	0.199	0.669	1.741	3.741
23	0.4	1.3	2.2	3.1	5.2	0.004	0.188	1.047	2.031	4.931
24	0.4	1.2	2.5	3.4	5.3	0.005	0.215	1.256	2.470	5.214
25	0.3	0.7	1.8	3.5	4.5	0.004	0.172	0.680	1.541	3.896
JML	9.3	23.6	49.6	77.7	113.2	0.116	4.7	21.65	46.90	107.64
X	0.37	0.98	2.16	3.38	4.921	0.005	0.195	0.941	2.039	4.659

Lampiran 20. Tabel hasil pengamatan panjang dan berat ulat sutera pada perlakuan C

UL	PANJANG ULAT					BERAT ULAT				
	1	2	3	4	5	1	2	3	4	5
1	0.4	1.1	3.8	5.7	7.5	0.005	0.231	2.345	5.215	8.274
2	0.3	1.2	2.8	4.8	6.3	0.004	0.169	1.971	4.542	6.731
3	0.3	1.0	3.0	4.8	6.2	0.006	0.210	1.841	4.131	6.415
4	0.5	1.2	3.9	5.8	7.7	0.005	0.214	2.414	5.616	8.445
5	0.4	1.4	3.2	5.5	6.7	0.004	0.187	1.974	4.616	7.471
6	0.4	1.1	3.2	4.9	5.8	0.005	0.221	1.895	4.516	6.847
7	0.5	1.2	3.4	4.7	5.6	0.006	0.184	1.884	4.235	6.254
8	0.5	1.2	3.6	5.8	7.4	0.005	0.227	2.514	5.629	8.514
9	0.4	1.3	3.5	5.5	6.7	0.006	0.199	1.815	4.515	7.345
10	0.3	0.9	2.7	4.6	5.5	0.004	0.191	1.741	4.171	6.314
11	0.4	1.3	3.4	5.3	6.8	0.004	0.182	2.141	4.713	7.591
12	0.4	1.2	3.7	5.9	7.6	0.004	0.231	2.241	5.552	8.670
13	0.3	0.9	2.8	5.2	6.3	0.005	0.175	1.787	4.041	6.475
14	0.4	1.5	3.8	5.7	7.2	0.006	0.215	1.759	4.561	7.164
15	0.3	0.8	3.3	5.1	6.4	0.005	0.197	1.947	4.241	6.549
16	0.3	1.2	3.2	5.3	6.5	0.005	0.164	1.949	4.668	7.374
17	0.3	1.4	3.5	5.4	6.6	0.005	0.159	1.885	4.768	7.332
18	0.3	1.3	3.7	5.3	6.7	0.004	0.215	1.951	4.774	7.345
19	0.4	1.1	3.4	4.9	6.3	0.006	0.205	1.857	4.341	6.646
20	0.4	0.9	2.7	4.8	6.4	0.004	0.164	1.890	4.416	6.747
21	0.3	1.0	2.9	4.8	6.2	0.004	0.177	2.101	4.486	7.120
22	0.3	1.1	3.6	5.2	6.3	0.005	0.188	1.881	4.214	6.837
23	0.4	1.3	3.1	4.5	6.6	0.005	0.179	1.994	4.415	7.235
24	0.3	0.8	3.4	5.1	6.4	0.004	0.185	1.874	4.314	7.471
25	0.5	1.2	3.1	5.4	6.8	0.005	0.197	1.945	4.215	7.352
JML	9.3	29	82.7	130	164.5	0.121	4.866	49.60	115.11	180.91
X	0.37	1.16	3.31	5.2	6.58	0.005	0.195	1.984	4.604	7.239

Lampiran 21. Tabel hasil pengamatan panjang dan berat ulat sutera pada perlakuan D

UL	PANJANG ULAT					BERAT ULAT				
	1	2	3	4	5	1	2	3	4	5
1	0.5	1.2	3.6	5.4	6.8	0.006	0.187	1.875	4.768	7.352
2	0.3	0.8	3.4	5.1	6.4	0.005	0.164	1.951	4.813	7.471
3	0.3	1.4	3.1	4.9	6.6	0.004	0.149	1.847	4.667	7.235
4	0.4	1.1	3.6	5.2	6.3	0.005	0.192	1.894	4.314	6.837
5	0.4	0.8	2.9	4.8	6.2	0.004	0.205	1.947	4.469	6.946
6	0.4	0.9	2.7	4.8	6.4	0.005	0.154	1.871	4.214	6.747
7	0.3	1.1	3.4	5.1	6.0	0.006	0.167	1.745	4.441	6.646
8	0.4	1.3	3.7	5.3	6.7	0.006	0.178	1.984	4.786	7.125
9	0.3	1.4	3.5	5.4	6.6	0.004	0.169	1.891	4.771	7.332
10	0.3	1.2	3.2	5.3	6.5	0.005	0.175	1.991	4.415	7.374
11	0.4	0.8	3.3	5.1	6.2	0.004	0.187	1.745	4.324	6.549
12	0.4	1.3	3.8	5.7	7.6	0.006	0.201	2.101	5.118	8.274
13	0.3	1.2	2.8	4.9	6.3	0.005	0.149	1.871	4.552	6.741
14	0.3	1.0	3.0	4.8	6.2	0.005	0.195	1.741	4.141	6.415
15	0.3	1.2	3.9	5.8	7.7	0.005	0.214	1.974	5.291	8.445
16	0.4	1.4	3.2	5.4	6.7	0.004	0.177	1.885	4.716	7.471
17	0.4	1.1	3.2	4.9	5.8	0.004	0.195	1.874	4.616	6.847
18	0.3	1.2	3.1	4.7	5.6	0.004	0.174	1.715	4.345	6.254
19	0.5	1.4	3.6	5.8	7.5	0.004	0.215	2.141	5.714	8.741
20	0.3	1.3	3.5	5.5	6.7	0.004	0.189	1.914	5.692	7.345
21	0.3	0.7	2.7	4.6	5.5	0.005	0.181	1.747	3.992	6.141
22	0.4	1.4	3.4	5.3	6.8	0.006	0.172	1.945	4.615	7.591
23	0.5	1.2	3.7	5.9	7.6	0.006	0.221	2.014	5.145	8.670
24	0.3	0.9	3.1	5.2	5.9	0.005	0.165	1.749	4.271	6.475
25	0.4	1.5	3.8	5.7	7.1	0.005	0.205	1.947	4.813	7.614
JML	9.3	28.8	83.2	130.6	163.7	0.122	4.58	47.36	116.9	180.6
X	0.37	1.15	3.33	5.224	6.548	0.005	0.183	1.89	4.680	7.225

Lampiran 22. Tabel hasil pengamatan berat kokon dengan pupa dan tanpa pupa serta jenis kelamin ulat sutera (*Bombyx mori* L.) perlakuan A

UL	BERAT KOKON		KELAMIN	
	Dng pupa	Tanpa pupa	♀	♂
1	1.240	0.334	√	
2	0.941	0.203	√	
3	-	-	-	-
4	0.975	0.235	√	
5	0.744	0.176		√
6	1.341	0.337		√
7	-	-	-	-
8	0.898	0.215	√	
9	-	-	-	-
10	0.953	0.203		√
11	1.031	0.267		√
12	0.891	0.231		√
13	0.894	0.217		√
14	0.905	0.213		√
15	-	-	-	-
16	0.925	0.232	√	
17	1.039	0.251	√	
18	-	-	-	-
19	0.874	0.224	√	
20	0.905	0.231		√
21	0.814	0.213	√	
22	0.953	0.233		√
23	0.894	0.229		√
24	0.893	0.221		√
25	0.987	0.248	√	
JML	19.097	4.713		
X	0.954	0.235		

Lampiran 23. Tabel hasil pengamatan berat kokon dengan pupa dan tanpa pupa serta jenis kelamin ulat sutera (*Bombyx mori* L.) perlakuan B

UL	BERAT KOKON		KELAMIN	
	Dng pupa	Tanpa pupa	♀	♂
1	1.305	0.314	√	
2	1.457	0.371	√	
3	1.031	0.221		√
4	—	—	—	—
5	2.101	0.509	√	
6	1.820	0.445		√
7	1.570	0.382		√
8	—	—	—	—
9	1.011	0.231	√	
10	1.141	0.203	√	
11	1.341	0.320		√
12	1.613	0.421	√	
13	1.014	0.234		√
14	1.341	0.309		√
15	1.112	0.245		√
16	1.445	0.371		√
17	1.031	0.267	√	
18	1.452	0.371		√
19	1.170	0.274		√
20	1.341	0.347		√
21	1.670	0.457	√	
22	1.665	0.407	√	
23	1.012	0.263	√	
24	1.514	0.388		√
25	1.207	0.311	√	
JML	31.364	7.661		
X	1.363	0.333		

Lampiran 24. Tabel hasil pengamatan berat kokon dengan pupa dan tanpa pupa serta jenis kelamin ulat sutera (*Bombyx mori* L.) perlakuan C

UL	BERAT KOKON		KELAMIN	
	Dng pupa	Tanpa pupa	♀	♂
1	4.215	1.143	√	
2	3.079	0.761		√
3	3.016	0.670		√
4	4.561	1.341	√	
5	3.103	0.757		√
6	3.033	0.761		√
7	3.814	0.853		√
8	4.654	1.063	√	
9	3.035	0.748		√
10	3.712	0.878	√	
11	3.813	0.935		√
12	4.644	1.261	√	
13	3.741	0.853		√
14	3.945	0.885	√	
15	3.741	0.901	√	
16	4.080	1.102		√
17	4.143	1.041	√	
18	4.105	1.215		√
19	3.051	0.801		√
20	3.094	0.774		√
21	3.110	0.841	√	
22	3.087	0.787		√
23	3.930	0.870		√
24	4.282	1.075	√	
25	4.134	1.131	√	
JML	93.122	23.447		
X	3.724	0.937		

Lampiran 25. Tabel hasil pengamatan berat kokon dengan pupa dan tanpa pupa serta jenis kelamin ulat sutera (*Bombyx mori* L.) perlakuan D

UL	BERAT KOKON		KELAMIN	
	Dng pupa	Tanpa pupa	♀	♂
1	4.388	1.157	√	
2	4.282	1.125	√	
3	3.930	0.916		√
4	3.087	0.796	√	
5	3.110	0.708		√
6	3.094	0.695		√
7	3.051	0.710		√
8	4.105	1.094	√	
9	4.143	1.146	√	
10	4.080	1.113	√	
11	3.949	0.871		√
12	4.571	1.233	√	
13	3.079	0.680		√
14	3.016	0.841		√
15	4.561	1.031	√	
16	3.103	0.710		√
17	3.033	0.881	√	
18	3.814	0.945	√	
19	4.654	1.363	√	
20	3.035	0.715		√
21	3.941	0.970	√	
22	3.813	0.894	√	
23	4.744	1.268	√	
24	3.741	0.884		√
25	3.945	0.925	√	
JML	94.269	23.67		
X	3.770	0.946		

OBS	PERL	UL	INTL	INS_1	INS_2	INS_3	INS_4	INS_5	PJG_1	PJG_2	PJG_3	PJG_4	PJG_5
1	20%	1	9	3	6	5	6	7	0.3	0.9	2.3	2.8	4.2
2	20%	2	10	5	5	6	6	6	0.4	0.8	2.1	2.9	3.6
3	20%	3	9	4	5	.	.	.	0.3	0.7	.	.	.
4	20%	4	9	4	6	6	6	7	0.4	0.9	1.5	2.3	3.6
5	20%	5	9	4	5	6	6	7	0.4	1.0	1.3	2.4	3.7
6	20%	6	10	4	5	6	5	7	0.4	0.7	1.2	3.0	4.2
7	20%	7	10	4	.	.	.	.	0.3	.	.	.	.
8	20%	8	11	4	5	6	6	7	0.4	0.7	1.7	2.9	4.1
9	20%	9	9	4	5	.	.	.	0.5	0.7	.	.	.
10	20%	10	10	3	5	6	7	7	0.4	1.2	1.8	2.9	3.8
11	20%	11	11	4	5	5	6	7	0.5	0.9	1.3	2.5	4.1
12	20%	12	9	3	6	5	6	7	0.4	0.8	1.6	2.7	4.1
13	20%	13	9	4	5	6	7	7	0.3	1.0	1.4	2.5	3.5
14	20%	14	9	3	5	6	6	9	0.3	0.7	1.6	2.7	3.6
15	20%	15	10	3	5	6	.	.	0.3	0.8	1.2	.	.
16	20%	16	10	4	5	6	6	7	0.3	0.9	1.7	2.8	3.7
17	20%	17	10	3	4	6	7	7	0.4	0.8	1.3	2.6	4.2
18	20%	18	9	4	5	.	.	.	0.4	0.7	.	.	.
19	20%	19	9	3	5	6	6	7	0.3	0.8	1.5	2.7	4.0
20	20%	20	10	4	6	5	5	8	0.4	1.0	1.9	2.6	3.8
21	20%	21	10	3	6	5	8	7	0.4	0.8	1.6	2.4	3.4
22	20%	22	10	5	4	5	6	8	0.3	0.9	1.7	2.5	3.6
23	20%	23	9	3	5	6	7	7	0.4	0.8	1.9	2.8	3.7
24	20%	24	9	4	5	7	6	7	0.3	0.9	1.5	2.7	3.7
25	20%	25	10	3	6	5	6	7	0.4	0.7	1.7	2.8	4.2
26	40%	1	9	4	4	6	5	7	0.4	1.0	1.7	2.9	4.6
27	40%	2	10	4	5	5	6	7	0.5	1.2	2.1	3.5	5.2
28	40%	3	9	5	5	6	6	6	0.3	0.7	1.9	2.8	4.6
29	40%	4	9	3	.	.	.	.	0.4	.	.	.	.
30	40%	5	9	4	6	5	6	4	0.3	0.8	1.7	3.1	4.5
31	40%	6	10	4	4	5	7	6	0.3	0.5	1.9	3.7	4.4
32	40%	7	10	5	5	6	6	5	0.4	1.2	2.3	3.4	5.3
33	40%	8	9	3	5	.	.	.	0.5	0.7	.	.	.
34	40%	9	10	3	6	5	6	7	0.4	0.9	2.4	3.6	4.7
35	40%	10	10	4	5	6	7	6	0.4	0.9	2.3	3.4	4.8
36	40%	11	11	3	5	6	7	6	0.4	1.0	1.9	3.4	4.6
37	40%	12	10	4	5	5	5	6	0.5	1.4	2.0	3.1	5.3
38	40%	13	9	5	4	5	6	6	0.3	0.8	2.1	3.5	4.8
39	40%	14	9	4	4	5	5	7	0.4	1.3	2.3	3.6	5.4
40	40%	15	10	4	4	5	5	7	0.4	1.0	2.6	3.7	5.2
41	40%	16	11	4	5	5	6	5	0.3	1.2	2.1	3.8	5.3
42	40%	17	9	5	4	5	5	7	0.3	1.1	2.6	3.7	4.9
43	40%	18	9	3	5	5	6	6	0.4	1.3	2.4	3.3	5.2
44	40%	19	10	4	5	6	5	5	0.3	1.1	2.5	3.2	5.0
45	40%	20	9	4	5	5	6	6	0.3	0.6	1.9	3.2	4.7
46	40%	21	10	5	4	5	6	6	0.4	0.9	2.1	3.4	5.1
47	40%	22	9	3	5	5	7	7	0.3	0.8	2.2	3.4	4.6
48	40%	23	10	4	4	6	5	6	0.4	1.3	2.3	3.1	5.2
49	40%	24	10	5	4	5	7	5	0.4	1.2	2.5	3.4	5.3
50	40%	25	9	3	5	6	6	6	0.3	0.7	1.8	3.5	4.5

OBS	PERL	UL	INTL	INS_1	INS_2	INS_3	INS_4	INS_5	PJG_1	PJG_2	PJG_3	PJG_4	PJG_5
51	60%	1	9	4	5	3	4	6	0.4	1.1	3.8	5.7	7.5
52	60%	2	11	4	3	4	5	7	0.3	1.2	2.8	4.8	6.3
53	60%	3	10	4	4	5	6	7	0.3	1.0	3.0	4.8	6.2
54	60%	4	9	3	3	4	6	7	0.5	1.2	3.9	5.8	7.7
55	60%	5	9	4	4	4	5	4	0.4	1.4	3.2	5.5	6.7
56	60%	6	9	4	5	5	6	5	0.4	1.1	3.2	4.9	5.8
57	60%	7	10	5	3	3	6	6	0.5	1.2	3.4	4.7	5.6
58	60%	8	9	4	4	5	4	6	0.5	1.2	3.6	5.8	7.4
59	60%	9	9	4	4	5	4	7	0.4	1.3	3.5	5.5	6.7
60	60%	10	10	3	4	5	4	7	0.3	0.9	2.7	4.6	5.5
61	60%	11	9	3	4	5	4	5	0.4	1.3	3.4	5.3	6.8
62	60%	12	10	3	4	5	6	6	0.4	1.2	3.7	5.9	7.6
63	60%	13	10	4	3	5	5	7	0.3	0.9	2.8	5.2	6.3
64	60%	14	11	4	4	4	6	6	0.4	1.5	3.8	5.7	7.2
65	60%	15	10	5	3	4	4	5	0.3	0.8	3.3	5.1	6.4
66	60%	16	9	4	5	5	5	6	0.3	1.2	3.2	5.3	6.5
67	60%	17	9	5	4	5	5	5	0.3	1.4	3.5	5.4	6.6
68	60%	18	10	5	3	5	5	7	0.3	1.3	3.7	5.3	6.7
69	60%	19	9	4	5	4	4	6	0.4	1.1	3.4	4.9	6.3
70	60%	20	9	3	4	6	4	6	0.4	0.9	2.7	4.8	6.4
71	60%	21	9	5	3	5	5	5	0.3	1.0	2.9	4.8	6.2
72	60%	22	10	4	5	4	5	5	0.3	1.1	3.6	5.2	6.3
73	60%	23	9	4	4	5	5	6	0.4	1.3	3.1	4.5	6.6
74	60%	24	9	5	3	4	5	6	0.3	0.8	3.4	5.1	6.4
75	60%	25	10	4	4	5	6	7	0.5	1.2	3.1	5.4	6.8
76	80%	1	10	4	4	5	6	7	0.5	1.2	3.6	5.4	6.8
77	80%	2	9	5	3	4	5	6	0.3	0.8	3.4	5.1	6.4
78	80%	3	10	4	4	4	4	6	0.3	1.4	3.1	4.9	6.6
79	80%	4	10	4	5	4	5	5	0.4	1.1	3.6	5.2	6.3
80	80%	5	10	5	3	5	5	5	0.4	0.8	2.9	4.8	6.2
81	80%	6	9	3	4	6	4	6	0.4	0.9	2.7	4.8	6.4
82	80%	7	10	4	5	4	4	6	0.3	1.1	3.4	5.1	6.0
83	80%	8	9	5	3	5	5	7	0.4	1.3	3.7	5.3	6.7
84	80%	9	9	4	5	5	5	5	0.3	1.4	3.5	5.4	6.6
85	80%	10	9	5	4	5	5	6	0.3	1.2	3.2	5.3	6.5
86	80%	11	10	5	3	4	4	5	0.4	0.8	3.3	5.1	6.2
87	80%	12	10	5	4	3	4	6	0.4	1.3	3.8	5.7	7.6
88	80%	13	9	4	3	4	5	7	0.3	1.2	2.8	4.9	6.3
89	80%	14	11	4	4	5	6	7	0.3	1.0	3.0	4.8	6.2
90	80%	15	9	3	3	4	6	7	0.5	1.2	3.9	5.8	7.7
91	80%	16	10	4	4	4	5	4	0.4	1.4	3.2	5.4	6.7
92	80%	17	9	4	5	5	6	5	0.4	1.1	3.2	4.9	5.8
93	80%	18	10	5	3	3	6	6	0.3	1.2	3.1	4.7	5.6
94	80%	19	9	4	4	5	4	6	0.5	1.4	3.6	5.8	7.5
95	80%	20	10	4	4	5	4	7	0.3	1.3	3.5	5.5	6.7
96	80%	21	9	3	4	5	4	7	0.3	0.7	2.7	4.6	5.5
97	80%	22	10	4	3	4	5	5	0.4	1.4	3.4	5.3	6.8
98	80%	23	10	4	3	5	6	6	0.5	1.2	3.7	5.9	7.6
99	80%	24	11	3	4	5	5	7	0.3	0.9	3.1	5.2	5.9
100	80%	25	9	4	4	4	6	6	0.4	1.5	3.8	5.7	7.1

OBS	PERL	UL	BRT_1	BRT_2	BRT_3	BRT_4	BRT_5	BAS	KER
1	20%	1	.005	0.179	0.979	1.945	4.316	1.240	0.334
2	20%	2	.004	0.178	0.901	1.603	3.597	0.941	0.203
3	20%	3	.005	0.165	.	.	.	.	.
4	20%	4	.005	0.174	0.881	1.432	3.604	0.975	0.235
5	20%	5	.005	0.182	0.779	1.420	3.545	0.744	0.176
6	20%	6	.006	0.249	0.885	2.029	4.381	1.341	0.337
7	20%	7	.004	.	.	.	.	.	.
8	20%	8	.005	0.174	0.903	1.986	3.741	0.898	0.215
9	20%	9	.004	0.181	.	.	.	.	.
10	20%	10	.006	0.169	0.810	1.419	3.771	0.953	0.203
11	20%	11	.005	0.187	0.791	1.834	3.947	1.031	0.267
12	20%	12	.005	0.169	0.871	1.775	3.874	0.891	0.231
13	20%	13	.005	0.167	0.710	1.216	3.471	0.894	0.217
14	20%	14	.004	0.171	0.798	1.413	3.541	0.905	0.213
15	20%	15	.004	0.141	0.670	.	.	.	.
16	20%	16	.005	0.169	0.813	1.519	3.601	0.925	0.232
17	20%	17	.005	0.194	1.031	2.059	4.031	1.039	0.251
18	20%	18	.004	0.154	.	.	.	.	.
19	20%	19	.005	0.174	0.945	1.314	3.897	0.874	0.224
20	20%	20	.004	0.174	0.771	1.613	3.703	0.905	0.231
21	20%	21	.004	0.163	0.815	1.516	3.416	0.814	0.213
22	20%	22	.004	0.169	0.721	1.345	3.743	0.953	0.233
23	20%	23	.004	0.174	0.765	1.241	3.669	0.894	0.229
24	20%	24	.004	0.169	0.881	1.341	3.542	0.893	0.221
25	20%	25	.005	0.225	1.034	2.015	3.974	0.987	0.248
26	40%	1	.006	0.176	0.891	1.707	4.215	1.305	0.314
27	40%	2	.005	0.197	1.260	2.560	5.319	1.457	0.371
28	40%	3	.005	0.181	0.665	1.888	4.387	1.031	0.221
29	40%	4	.004	.	.	.	.	.	.
30	40%	5	.005	0.187	0.670	1.671	4.135	2.101	0.509
31	40%	6	.005	0.196	0.661	1.432	3.841	1.820	0.445
32	40%	7	.004	0.194	1.201	2.312	5.241	1.570	0.382
33	40%	8	.005	0.161	.	.	.	.	.
34	40%	9	.006	0.188	0.741	1.812	4.339	1.011	0.231
35	40%	10	.004	0.235	0.885	1.870	4.641	1.141	0.203
36	40%	11	.004	0.203	0.741	1.663	3.885	1.341	0.320
37	40%	12	.005	0.196	1.147	2.670	5.331	1.613	0.421
38	40%	13	.004	0.185	0.871	1.841	4.518	1.014	0.234
39	40%	14	.004	0.198	1.470	2.613	5.239	1.341	0.309
40	40%	15	.004	0.187	1.493	2.552	4.991	1.112	0.245
41	40%	16	.005	0.174	1.034	2.441	5.037	1.445	0.371
42	40%	17	.005	0.245	0.976	1.913	4.531	1.031	0.267
43	40%	18	.004	0.192	1.274	2.142	5.141	1.452	0.371
44	40%	19	.005	0.176	0.930	1.973	5.059	1.170	0.274
45	40%	20	.004	0.271	0.945	1.991	4.319	1.341	0.347
46	40%	21	.005	0.184	1.143	2.067	5.213	1.670	0.457
47	40%	22	.005	0.199	0.669	1.741	3.741	1.665	0.407
48	40%	23	.004	0.188	1.047	2.031	4.931	1.012	0.263
49	40%	24	.005	0.215	1.256	2.470	5.214	1.514	0.388
50	40%	25	.004	0.172	0.680	1.541	3.896	1.207	0.311

OBS	PERL	UL	BRT_1	BRT_2	BRT_3	BRT_4	BRT_5	BAS	KER
51	60%	1	.005	0.231	2.345	5.215	8.274	4.215	1.143
52	60%	2	.004	0.169	1.971	4.542	6.731	3.079	0.761
53	60%	3	.006	0.210	1.841	4.131	6.415	3.016	0.670
54	60%	4	.005	0.214	2.414	5.616	8.445	4.561	1.341
55	60%	5	.004	0.187	1.974	4.616	7.471	3.103	0.757
56	60%	6	.005	0.221	1.895	4.516	6.847	3.033	0.761
57	60%	7	.006	0.184	1.884	4.235	6.254	3.814	0.853
58	60%	8	.005	0.227	2.514	5.629	8.514	4.654	1.063
59	60%	9	.006	0.199	1.815	4.515	7.345	3.035	0.748
60	60%	10	.004	0.191	1.741	4.171	6.314	3.712	0.878
61	60%	11	.004	0.182	2.141	4.713	7.591	3.813	0.935
62	60%	12	.004	0.231	2.241	5.552	8.670	4.644	1.261
63	60%	13	.005	0.175	1.787	4.041	6.475	3.741	0.853
64	60%	14	.006	0.215	1.759	4.561	7.614	3.945	0.885
65	60%	15	.005	0.197	1.947	4.241	6.549	3.741	0.901
66	60%	16	.005	0.164	1.949	4.668	7.374	4.080	1.102
67	60%	17	.005	0.159	1.885	4.768	7.332	4.143	1.041
68	60%	18	.004	0.215	1.951	4.774	7.345	4.105	1.215
69	60%	19	.006	0.205	1.857	4.341	6.646	3.051	0.801
70	60%	20	.004	0.164	1.890	4.416	6.747	3.094	0.774
71	60%	21	.004	0.177	2.101	4.686	7.120	3.110	0.841
72	60%	22	.005	0.188	1.881	4.214	6.837	3.087	0.787
73	60%	23	.005	0.179	1.994	4.415	7.235	3.930	0.870
74	60%	24	.004	0.185	1.874	4.314	7.471	4.282	1.075
75	60%	25	.005	0.197	1.945	4.215	7.352	4.134	1.131
76	80%	1	.006	0.187	1.875	4.768	7.352	4.388	1.157
77	80%	2	.005	0.164	1.951	4.813	7.471	4.282	1.125
78	80%	3	.004	0.149	1.847	4.667	7.235	3.930	0.916
79	80%	4	.005	0.192	1.894	4.314	6.837	3.087	0.796
80	80%	5	.004	0.205	1.947	4.469	6.946	3.094	0.708
81	80%	6	.005	0.154	1.871	4.214	6.747	3.051	0.695
82	80%	7	.006	0.167	1.745	4.441	6.646	4.105	0.710
83	80%	8	.006	0.178	1.984	4.786	7.125	4.143	1.094
84	80%	9	.004	0.169	1.891	4.771	7.332	4.080	1.146
85	80%	10	.005	0.175	1.991	4.415	7.374	3.949	1.113
86	80%	11	.004	0.187	1.745	4.314	6.549	4.571	0.871
87	80%	12	.006	0.201	2.101	5.118	8.274	3.079	1.233
88	80%	13	.005	0.149	1.871	4.552	6.741	3.016	0.680
89	80%	14	.005	0.195	1.741	4.141	6.415	4.561	0.841
90	80%	15	.005	0.214	1.974	5.291	8.445	3.103	1.031
91	80%	16	.004	0.177	1.885	4.716	7.471	3.033	0.710
92	80%	17	.004	0.195	1.874	4.616	6.847	3.814	0.881
93	80%	18	.004	0.174	1.715	4.345	6.254	4.654	0.945
94	80%	19	.004	0.215	2.141	5.714	8.741	3.035	1.363
95	80%	20	.004	0.189	1.914	5.692	7.345	3.941	0.715
96	80%	21	.005	0.181	1.747	3.992	6.141	3.813	0.970
97	80%	22	.006	0.172	1.945	4.615	7.591	4.744	0.894
98	80%	23	.006	0.221	2.014	5.145	8.670	3.741	1.268
99	80%	24	.005	0.165	1.749	4.271	6.475	3.845	0.884
100	80%	25	.005	0.205	1.947	4.813	7.614	3.945	0.925

Analysis of Variance Procedure
Class Level Information

Class	Levels	Values
PERL	4	20% 40% 60% 80%
UL	25	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Number of observations in data set = 100

Group	Obs	Dependent Variables
1	100	INTL INS_1 PJG_1 BRT_1
2	98	INS_2 PJG_2 BRT_2
3	94	INS_3 PJG_3 BRT_3
4	93	INS_4 INS_5 PJG_4 PJG_5 BRT_4 BRT_5 BAS KER

NOTE: Variables in each group are consistent with respect to the presence or absence of missing values.

Analysis of Variance Procedure

Dependent Variable: INTL

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	0.19000000	0.06333333	0.15	0.9282
Error	96	40.00000000	0.41666667		
Corrected Total	99	40.19000000			
	R-Square	C.V.	Root MSE	INTL Mean	
	0.004728	6.730941	0.645497	9.59000000	

Duncan's Multiple Range Test for variable: INTL

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 96 MSE= 0.416667

Number of Means 2 3 4
Critical Range 0.363 0.382 0.394

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	9.640	25	80%
A			
A	9.600	25	20%
A			
A	9.600	25	40%
A			
A	9.520	25	60%

Analysis of Variance Procedure

Dependent Variable: INS_1

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	2.75000000	0.91666667	2.00	0.1191
Error	96	44.00000000	0.45833333		
Corrected Total	99	46.75000000			
R-Square		C.V.	Root MSE	INS_1 Mean	
0.058824		17.13932	0.677003	3.95000000	

Duncan's Multiple Range Test for variable: INS_1

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 96 MSE= 0.458333

Number of Means 2 3 4
Critical Range 0.381 0.400 0.413

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	4.120	25	80%
A			
B	4.040	25	60%
B			
B	3.960	25	40%
B			
B	3.680	25	20%

Analysis of Variance Procedure

Dependent Variable: INS_2

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	32.09894558	10.69964853	24.57	0.0001
Error	94	40.93166667	0.43544326		
Corrected Total	97	73.03061224			
	R-Square	C.V.	Root MSE	INS_2 Mean	
	0.439527	15.07421	0.659881	4.37755102	

Duncan's Multiple Range Test for variable: INS_2

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 94 MSE= 0.435443
 WARNING: Cell sizes are not equal.
 Harmonic Mean of cell sizes= 24.4898

Number of Means	2	3	4
Critical Range	0.375	0.394	0.407

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	5.167	24	20%
B	4.708	24	40%
C	3.880	25	60%
C			
C	3.800	25	80%

Analysis of Variance Procedure

Dependent Variable: INS_3

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	25.08625611	8.36208537	20.96	0.0001
Error	90	35.90310559	0.39892340		
Corrected Total	93	60.98936170			

R-Square	C.V.	Root MSE	INS_3 Mean
0.411322	12.65901	0.631604	4.98936170

Duncan's Multiple Range Test for variable: INS_3

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 90 MSE= 0.398923

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 23.37851

Number of Means	2	3	4
Critical Range	0.367	0.386	0.399

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	5.714	21	20%
A			
A	5.348	23	40%
B	4.560	25	60%
B			
B	4.480	25	80%

Analysis of Variance Procedure

Dependent Variable: INS_4

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	28.17219261	9.39073087	16.41	0.0001
Error	89	50.94608696	0.57242794		
Corrected Total	92	79.11827957			
	R-Square	C.V.	Root MSE	INS_4 Mean	
	0.356077	13.85095	0.756590	5.46236559	

Duncan's Multiple Range Test for variable: INS_4

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 89 MSE= 0.572428

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 23.05764

Number of Means 2 3 4

Critical Range 0.443 0.466 0.481

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	6.200	20	20%
A			
A	5.913	23	40%
B	4.960	25	60%
B			
B	4.960	25	80%

Analysis of Variance Procedure

Dependent Variable: INS_5

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	20.29992987	6.76664329	10.47	0.0001
Error	89	57.50652174	0.64614069		
Corrected Total	92	77.80645161			
	R-Square	C.V.	Root MSE	INS_5 Mean	
	0.260903	12.84469	0.803829	6.25806452	

Duncan's Multiple Range Test for variable: INS_5

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 89 MSE= 0.646141

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 23.05764

Number of Means 2 3 4

Critical Range 0.471 0.495 0.511

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	7.150	20	20%
B	6.043	23	40%
B			
B	6.000	25	60%
B			
B	6.000	25	80%

Analysis of Variance Procedure

Dependent Variable: PJG_1

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	0.00030000	0.00010000	0.02	0.9960
Error	96	0.46560000	0.00485000		
Corrected Total	99	0.46590000			
	R-Square	C.V.	Root MSE	PJG_1 Mean	
	0.000644	18.77141	0.069642	0.37100000	

Duncan's Multiple Range Test for variable: PJG_1

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 96 MSE= 0.00485

Number of Means	2	3	4
Critical Range	.0391	.0412	.0425

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	0.3720	25	40%
A			
A	0.3720	25	60%
A			
A	0.3720	25	80%
A			
A	0.3680	25	20%

Analysis of Variance Procedure

Dependent Variable: PJG_2

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	1.63835544	0.54611848	13.18	0.0001
Error	94	3.89358333	0.04142110		
Corrected Total	97	5.53193878			
	R-Square	C.V.	Root MSE	PJG_2 Mean	
	0.296163	19.72812	0.203522	1.03163265	

Duncan's Multiple Range Test for variable: PJG_2

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 94 MSE= 0.041421

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 24.4898

Number of Means	2	3	4
Critical Range	0.116	0.122	0.125

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	1.1520	25	80%
A			
A	1.1440	25	60%
B	0.9833	24	40%
C	0.8375	24	20%

Analysis of Variance Procedure

Dependent Variable: PJG_3

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	50.65115749	16.88371916	163.33	0.0001
Error	90	9.30341698	0.10337130		
Corrected Total	93	59.95457447			
	R-Square	C.V.	Root MSE	PJG_3 Mean	
	0.844826	12.12287	0.321514	2.65212766	

Duncan's Multiple Range Test for variable: PJG_3

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 90 MSE= 0.103371

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 23.37851

Number of Means 2 3 4

Critical Range 0.187 0.197 0.203

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	3.3280	25	80%
A			
A	3.3080	25	60%
B	2.1565	23	40%
C	1.6095	21	20%

Analysis of Variance Procedure

Dependent Variable: PJG_4

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	113.2422857	37.7474286	354.30	0.0001
Error	89	9.4822304	0.1065419		
Corrected Total	92	122.7245161			
	R-Square	C.V.	Root MSE	PJG_4 Mean	
	0.922736	7.747807	0.326408	4.21290323	

Duncan's Multiple Range Test for variable: PJG_4

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 89 MSE= 0.106542

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 23.05764

Number of Means 2 3 4

Critical Range 0.191 0.201 0.207

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	5.2240	25	80%
A			
A	5.2000	25	60%
B	3.3783	23	40%
C	2.6750	20	20%

Analysis of Variance Procedure

Dependent Variable: PJG_5

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	118.9377814	39.6459271	174.42	0.0001
Error	89	20.2295304	0.2272981		
Corrected Total	92	139.1673118			

R-Square	C.V.	Root MSE	PJG_5 Mean
0.854639	8.556249	0.476758	5.57204301

Duncan's Multiple Range Test for variable: PJG_5

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 89 MSE= 0.227298
 WARNING: Cell sizes are not equal.
 Harmonic Mean of cell sizes= 23.05764

Number of Means	2	3	4
Critical Range	0.279	0.294	0.303

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	6.580	25	60%
A			
A	6.548	25	80%
B	4.922	23	40%
C	3.840	20	20%

Analysis of Variance Procedure

Dependent Variable: BRT_1

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	0.00000123	0.00000041	0.83	0.4815
Error	96	0.00004752	0.00000049		
Corrected Total	99	0.00004875			
	R-Square	C.V.	Root MSE	BRT_1 Mean	
	0.025231	14.81184	0.000704	0.00475000	

Duncan's Multiple Range Test for variable: BRT_1

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 96 MSE= 4.95E-7

Number of Means	2	3	4
Critical Range	.000396	.000416	.000429

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	0.004880	25	80%
A			
A	0.004840	25	60%
A			
A	0.004640	25	20%
A			
A	0.004640	25	40%

Analysis of Variance Procedure

Dependent Variable: BRT_2

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	0.00598184	0.00199395	4.13	0.0085
Error	94	0.04541372	0.00048312		
Corrected Total	97	0.05139556			
	R-Square	C.V.	Root MSE	BRT_2 Mean	
	0.116388	11.70870	0.021980	0.18772449	

Duncan's Multiple Range Test for variable: BRT_2

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 94 MSE= 0.000483
 WARNING: Cell sizes are not equal.
 Harmonic Mean of cell sizes= 24.4898

Number of Means	2	3	4
Critical Range	.0125	.0131	.0135

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	0.19583	24	40%
A	0.19464	25	60%
A	0.18320	25	80%
B	0.17712	24	20%

Analysis of Variance Procedure

Dependent Variable: BRT_3

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	24.70255818	8.23418606	250.11	0.0001
Error	90	2.96305018	0.03292278		
Corrected Total	93	27.66560835			

R-Square	C.V.	Root MSE	BRT_3 Mean
0.892898	12.41707	0.181446	1.46126596

Duncan's Multiple Range Test for variable: BRT_3

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 90 MSE= 0.032923
 WARNING: Cell sizes are not equal.
 Harmonic Mean of cell sizes= 23.37851

Number of Means	2	3	4
Critical Range	0.106	0.111	0.115

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	1.9838	25	60%
A			
A	1.8944	25	80%
B	0.9848	23	40%
C	0.8454	21	20%

Analysis of Variance Procedure

Dependent Variable: BRT_4

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	184.1741169	61.3913723	386.42	0.0001
Error	89	14.1396521	0.1588725		
Corrected Total	92	198.3137690			
	R-Square	C.V.	Root MSE	BRT_4 Mean	
	0.928701	11.91789	0.398588	3.34445161	

Duncan's Multiple Range Test for variable: BRT_4

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 89 MSE= 0.158872

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 23.05764

Number of Means 2 3 4

Critical Range 0.234 0.246 0.253

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	4.680	25	80%
A			
A	4.604	25	60%
B	2.039	23	40%
C	1.602	20	20%



Analysis of Variance Procedure

Dependent Variable: BRT_5

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	214.8011028	71.6003676	202.31	0.0001
Error	89	31.4990653	0.3539221		
Corrected Total	92	246.3001681			
	R-Square	C.V.	Root MSE	BRT_5 Mean	
	0.872111	10.16789	0.594914	5.85090323	

Duncan's Multiple Range Test for variable: BRT_5

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 89 MSE= 0.353922

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 23.05764

Number of Means	2	3	4
Critical Range	0.349	0.367	0.378

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	7.239	25	60%
A			
A	7.226	25	80%
B	4.659	23	40%
C	3.768	20	20%

Analysis of Variance Procedure

Dependent Variable: BAS

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	156.8196293	52.2732098	260.15	0.0001
Error	89	17.8830398	0.2009330		
Corrected Total	92	174.7026690			
	R-Square	C.V.	Root MSE	BAS Mean	
	0.897637	17.47277	0.448256	2.56545161	

Duncan's Multiple Range Test for variable: BAS

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 89 MSE= 0.200933

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 23.05764

Number of Means	2	3	4
Critical Range	0.263	0.276	0.285

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	3.800	25	80%
A			
A	3.725	25	60%
B	1.364	23	40%
C	0.955	20	20%

Analysis of Variance Procedure

Dependent Variable: KER

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
PERL	3	10.00855119	3.33618373	154.14	0.0001
Error	89	1.92627238	0.02164351		
Corrected Total	92	11.93482357			
	R-Square	C.V.	Root MSE	KER Mean	
	0.838601	22.99790	0.147117	0.63969892	

Duncan's Multiple Range Test for variable: KER

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 89 MSE= 0.021644

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 23.05764

Number of Means	2	3	4
Critical Range	.0862	.0906	.0935

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	PERL
A	0.9468	25	80%
A			
A	0.9379	25	60%
B	0.3331	23	40%
C	0.2357	20	20%

