Data Summaries for Viable Hatch from Pacific Herring Eggs Deposited at Different Intensities on a Variety of Substrates

A. S. Hourston and H. Rosenthal

Department of Fisheries and Oceans
Resource Services Branch
Pacific Biological Station
Nanaimo, British Columbia V9R 5K6

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DATA SUMMARIES FOR VIABLE HATCH FROM PACIFIC HERRING EGGS DEPOSITED AT DIFFERENT INTENSITIES ON A VARIETY OF SUBSTRATES

by

A. S. Hourston and H. Rosenthal[1]

Department of Fisheries and Oceans

Resource Services Branch

Pacific Biological Station

Nanaimo, British Columbia V9R 5K6

[1]Address: Biologische Anstalt Helgoland, Zentrale: Hamburg-Altona, 2

Hamburg 50, BRD.

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ABSTRACT

Hourston, A. S., and H. Rosenthal. 1981. Data summaries for viable hatch from Pacific herring eggs deposited at different intensities on a variety of substrates. Can. Data Rep. Fish. Aquat. Sci. 267: 56 p.

Data on the number of larvae hatched, the number of larvae viable, and the average length, weight, yolk volume and condition factor are arrayed by day for a series of 53 hatching experiments of Pacific herring spawnings at different intensities on a variety of substrates.

Key words: Clupeidae, spawning, hatching success, larvae.

RÉSUMÉ

Hourston, A. S., and H. Rosenthal. 1981. Data summaries for viable hatch from Pacific herring eggs deposited at different intensities on a variety of substrates. Can. Data Rep. Fish. Aquat. Sci. 267: 56 p.

Des données recueillies chaque jour sur le nombre de larves écloses, le nombre de larves viables, la longueur et le poids moyen et le facteur de volume et d'état du jaune sont présentées pour une série de 53 expériences d'incubation d'oeufs de hareng du Pacifique à différentes intensités sur divers substrats.

Mots clés: Clupéidés, frai, réussite de l'incubation, larves.

INTRODUCTION

Experiments to determine the viable hatch from herring eggs spawned at different intensity levels (Hourston et al. 1972) were conducted at the Pacific Biological Station in the spring of 1975. This report summarizes and archives the data utilized in this study.

METHODS

Samples of herring spawn on a variety of substrates were collected from natural spawnings in Barkley Sound on the west coast of Vancouver Island on March 23, 1975. These samples were placed in a 200 litre holding tank and transported by truck to the Pacific Biological Station. Seventeen subsamples of a few hundred eggs at selected spawning intensities were placed into 40 litre, square incubation tanks where they were held in aerated water at controlled temperature and salinity levels (8 ± 1°C and 25 ± 1‰). Shortly before hatching, the subsamples were transferred to small, aerated jars.

As hatching began, the hatched larvae were removed at approximately 12-hour intervals. The larvae were examined under a microscope for visible malformations such as bent body axis and retarded development of major body parts. Larvae malformed in this way were considered not viable (nv. in tables).

At each sampling period, up to 25 of the viable larvae (v. in tables) from each jar were measured for total length and the length (L) and height (H) of the yolk to the nearest hundredth of a mm. Yolk volume was calculated from the latter two using the formula

$$V = \frac{4}{3}\pi\left[\left(\frac{1}{2}L\right)^2\left(\frac{1}{2}H\right)\right]$$

The larvae were then rinsed in distilled water for 20 seconds to remove surplus salts, mounted on 1% silicated dried glass plates and dried at 80°C for approximately 24 hours. The plates were then stored in a dry nitrogen atmosphere for subsequent dry weight analysis on a Cahn balance. The condition factor (CF) was then calculated from the body length (L) and weight (W)

$$CF = 1000\,\frac{W}{L^3}$$

Larvae so processed are listed under "samp." in the tables.

The experiment was then repeated using artificially spawned egg depositions from two sets of fish (large and small) recently captured and held for this purpose. Twenty subsamples were taken from the egg depositions of the large fish and 16 from those of the small fish. In this second set of experiments, the larvae were removed each morning rather than at 12-hour intervals. Consequently, the time of sampling was not tabulated for these experiments. Limited resources precluded the processing of weights for some of the larvae sampled in this series.

RESULTS

The results were tabulated by day beginning with the first day of hatching for each of the two sets of experiments. The 53 experiments were arrayed by substrate within the seven major substrate types (Humphreys and Hourston 1978) represented. These were stringy red algae (Table 1-20), sea grasses (Tables 21-30), rockweeds (Tables 31-36), kelps (Tables 37-42), other substrates (Tables 43-45), other brown algae (Tables 46-47) and leafy red algae (Tables 48-53). Substrate types were arrayed in the same order as in the main paper (under preparation) for convenience in cross referencing. Similarly, data for individual substrates were arrayed by source (natural spawnings, artificial spawnings from large fish and artificial spawnings from small fish).

The beaker number in which the eggs were hatched in the first (A series) and second (B series) sets of experiments was recorded for convenience in referencing the original data sheets.

ACKNOWLEDGMENTS

Dr. H. von Westernhagen of the Biologische Anstalt Helgoland participated in the incubation of the eggs and in processing the hatched larvae. Laboratory assistance was provided by Ms. Susan Kerr and Ms. Marjory Bell.

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Humphreys, R. D., and A. S. Hourston. 1978. British Columbia herring spawn deposition survey manual. Fish. Mar. Serv. Misc. Spec. Publ. 38: 40 p.

Table 1. Beaker B20; Substrate type-Stringy red algae; Substrate-Delesseria; Intensity-M; Source-Artificial-Small fish; Hatch-48%; Larvae viable-87%; Dead eggs-232.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	17	32	3	23	7.56	.35	-	-	.241	.054	-	-
2	38	41	6	25	7.94	.31	-	-	.246	.029	-	-
3	54	30	3	25	7.74	.42	-	-	.217	.043	-	-
4	69	29	6	16	8.39	.35	-	-	.176	.070	-	-
5	85	31	4	15	8.05	.58	-	-	.164	.051	-	-
6	94	16	2	15	8.08	.80	-	-	.176	.076	-	-
7	98	9	1	8	7.46	.77	-	-	.173	.046	-	-
8	100	3	1	3	6.99	.85	-	-	.167	.043	-	-
9+	100	-	2	-	-	-	-	-	-	-	-	-
All		191	28	130	7.87	-	-	-	.207	-	-	-

Table 2. Beaker B19; Substrate type-Stringy red algae; Substrate-Delesseria; Intensity-H; Source-Artificial-Small fish; Hatch-27%; Larvae viable-89%; Dead eggs-235.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	14	11	1	11	7.44	.50	-	-	.230	.060	-	-
2	31	13	3	14	7.72	.45	-	-	.229	.047	-	-
3	71	31	2	23	7.43	.55	-	-	[1].230	.055	-	-
4	83	9	-	7	7.75	.48	-	-	.219	.073	-	-
5	96	9	1	9	7.84	.52	-	-	.160	.069	-	-
6	99	3	2	3	8.06	.66	-	-	.190	.070	-	-
7	99	-	-	-	-	-	-	-	-	-	-	-
8	100	1	1	1	7.48	-	-	-	.234	-	-	-
All		77	10	67	7.72	-	-	-	.221	-	-	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 3. Beaker B15; Substrate type-Stringy red algae; Substrate-Microcladia; Intensity-M; Source-Artificial-Large fish; Hatch-72%; Larvae viable-53%; Dead eggs-43.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	29	17	2	17	7.54	.36	-	-	.272	.035	-	-
2	29	-	6	2	7.13	-	-	-	.271	-	-	-
3	50	12	3	9	7.61	.22	-	-	.220	.020	-	-
4	69	11	6	10	7.99	.33	-	-	.197	.049	-	-
5	86	10	10	8	7.94	.37	-	-	.186	.013	-	-
6	91	3	3	3	7.84	.34	-	-	.187	.004	-	-
7	95	2	9	2	8.77	-	-	-	.132	-	-	-
8	98	2	6	2	8.21	-	-	-	.171	-	-	-
9	100	1	4	1	7.72	-	-	-	.117	-	-	-
All		58	52	54	7.77	-	-	-	.220	-	-	-

Table 4. Beaker B14; Substrate type-Stringy red algae; Substrate-Microcladia; Intensity-H; Source-Artificial-Large fish; Hatch-14%; Larvae viable-67%; Dead eggs-427.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	11	5	3	5	7.41	.32	-	-	.330	.070	-	-
2	17	3	1	3	7.43	.21	-	-	.291	.052	-	-
3	30	6	1	7	7.20	.49	-	-	.296	.056	-	-
4	52	10	2	10	7.98	.60	-	-	.238	.064	-	-
5	98	21	4	15	7.73	.73	-	-	.251	.096	-	-
6	98	-	7	-	-	-	-	-	-	-	-	-
7	98	-	4	-	-	-	-	-	-	-	-	-
8	98	-	1	-	-	-	-	-	-	-	-	-
9	100	1	-	1	7.32	-	-	-	.206	-	-	-
All		46	23	41	7.63	-	-	-	.267	-	-	-

Table 5. Beaker B24; Substrate type-Stringy red algae; Substrate-Neogardhiella; Intensity-M; Source-Artificial-Large fish; Hatch-84%; Larvae viable-87%; Dead eggs-47.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	10	20	7	19	[1]7.54	.39	.153	.012	.271	.041	.379	.078
2	23	27	3	25	7.80	.36	.173	.009	.244	.056	.369	.060
3	33	21	4	22	7.93	.35	.171	.011	.220	.053	.347	.046
4	45	26	1	13	[2]8.05	.58	.165	.010	.200	.089	.328	.103
5	62	34	4	16	8.50	.42	.159	.005	.122	.042	.263	.041
6	79	36	1	15	8.53	.35	.156	.004	.125	.056	.254	.037
7	83	7	2	7	8.36	.99	.154	.006	.122	.085	.288	.121
8	88	11	3	9	8.01	.62	.144	.010	.128	.105	.292	.090
9	97	19	4	15	8.99	.58	.155	.007	.088	.064	.220	.053
10	100-	5	1	3	7.62	1.07	.163	.004	.201	.049	.406	.204
11	100-	-	1	-	-	-	-	-	-	-	-	-
12	100	1	-	1	7.87	-	.151	-	.220	-	.311	-
All		207	31	145	8.16	-	.161	-	.184	-	.316	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 6. Beaker B23; Substrate type-Stringy red algae; Substrate-Neogardhiella; Intensity-H; Source-Artificial-Large fish; Hatch-60%; Larvae viable-89%; Dead eggs-212.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	11	30	8	20	[1]7.36	.44	[1].164	.025	.314	.049	[1].421	.109
2	15	13	4	13	7.77	.37	.174	.005	.267	.065	.375	.069
3	29	39	6	24	7.93	.43	.161	.004	.224	.055	.330	.070
4	44	42	6	16	8.05	.61	.163	.008	.203	.055	.326	.093
5	63	55	2	15	8.54	.55	.162	.005	.163	.059	.267	.067
6	81	51	3	15	8.60	.48	.156	.006	.121	.062	.250	.052
7	86	13	1	13	8.03	.78	.154	.006	.168	.079	.314	.104
8	96	30	4	15	8.85	.36	.144	.006	.102	.059	.210	.035
9	100-	9	2	9	8.44	.97	.160	.008	.158	.135	.291	.126
10	100	1	-	1	8.77	-	.162	-	.162	-	.240	-
All		283	36	141	8.14	-	.160	-	.198	-	.315	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 7. Beaker B26; Substrate type-Stringy red algae; Substrate-Neogardhiella; Intensity-M; Source-Artificial-Small fish; Hatch-86%; Larvae viable-93%; Dead eggs-53.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	4	13	4	7	[5] 7.57	.38	.140	.007	[3] .200	.014	.343	.095
2	7	8	4	8	8.12	.12	.148	.005	.185	.023	.277	.017
3	11	12	2	12	8.31	.18	.138	.003	.148	.023	.242	.013
4	20	29	3	15	8.42	.38	-	-	.134	.028	-	-
5	58	116	3	14	8.71	.18	.125	.009	.087	.026	.190	.023
6	80	68	-	14	8.83	.35	.123	.005	.073	.036	.181	.024
7	81	4	1	4	7.54	.92	.133	.004	.173	.100	.329	.106
8	84	10	1	10	8.56	.65	.135	.004	.097	.079	.224	.060
9	95	32	2	15	9.03	.74	.127	.003	.096	.085	.181	.057
10	98	9	1	9	8.61	.51	.138	.006	.149	.047	.221	.049
11	98	-	-	-	-	-	-	-	-	-	-	-
12	98	2	-	1	8.20	-	-	-	.148	-	-	-
14	100	5	-	5	8.18	.81	.131	.005	.157	.065	.254	.094
15+	100	-	1	-	-	-	-	-	-	-	-	-
All		308	22	114	8.45	-	.132	-	.127	-	.225	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 8. Beaker B25; Substrate type-Stringy red algae; Substrate-Neogardhiella; Intensity-H; Source-Artificial-Small fish; Hatch-61%; Larvae viable-91%; Dead eggs-171.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	8	18	7	15	[2]7.31	.57	[1].145	.014	[3].277	.036	.381	.107
2	15	18	3	18	7.77	.35	.159	.009	.217	.043	.343	.055
3	23	20	1	20	8.11	.33	-	-	.174	.039	-	-
4	40	39	3	15	8.16	.49	.146	.009	.151	.045	.275	.058
5	67	64	1	16	8.13	.43	.139	.008	.126	.034	.264	.048
6	87	48	1	16	8.48	.42	.133	.006	.108	.036	.222	.033
7	94	17	2	15	8.21	.74	.135	.011	.126	.064	.258	.079
8	97	8	3	7	[1]8.39	.79	.143	.006	[1].102	.083	.269	.091
9	100-	6	2	6	8.59	.33	.133	.013	.089	.091	.211	.030
10	100	1	-	1	8.85	-	.119	-	.004	-	.171	-
All		239	23	129	8.07	-	.142	-	.163	-	.284	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 9. Beaker B17; Substrate type-Stringy red algae; Substrate-Odonthalia; Intensity-M; Source-Artificial-large fish; Hatch-88%; Larvae viable-86%; Dead eggs-24.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	20	30	4	25	7.65	.21	-	-	.273	.029	-	-
2	31	17	4	16	7.75	.49	-	-	.256	.061	-	-
3	53	33	4	25	7.97	.33	-	-	.206	.048	-	-
4	74	31	4	15	8.16	.41	-	-	.192	.077	-	-
5	85	16	1	15	8.27	.50	-	-	.207	.081	-	-
6	95	15	1	15	8.48	.57	-	-	.124	.046	-	-
7	97	4	2	4	7.91	.78	-	-	.243	.092	-	-
8	99	3	4	3	7.83	.17	-	-	.136	.076	-	-
9	100	1	1	1	8.05	-	-	-	.0004	-	-	-
All		150	25	119	7.99	-	-	-	.213	-	-	-

Table 10. Beaker B18; Substrate type-Stringy red algae; Substrate-Odonthalia; Intensity-H; Source-Artificial-Large fish; Hatch-28%; Larvae viable-82%; Dead eggs-299.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	28	26	4	25	7.29	.53	-	-	.325	.079	-	-
2	40	11	3	10	7.47	.63	-	-	.313	.037	-	-
3	63	22	4	23	7.62	.52	-	-	.245	.056	-	-
4	77	13	3	13	7.50	.70	-	-	.214	.066	-	-
5	92	14	1	14	7.95	.82	-	-	.234	.084	-	-
6	100	7	2	7	8.41	.47	-	-	.146	.075	-	-
7+	100	-	4	-	-	-	-	-	-	-	-	-
All		93	21	92	7.61	-	-	-	.261	-	-	-

Table 11. Beaker B13; Substrate type-Stringy red algae; Substrate-Odonthalia; Intensity-M; Source-Artificial-Small fish; Hatch-82%; Larvae viable-83%; Dead eggs-60.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	29	66	18	19	^{3}7.37	.35	-	-	.217	.027	-	-
2	41	29	7	24	7.60	.47	-	-	.221	.031	-	-
3	53	27	5	24	7.68	.61	-	-	.171	.041	-	-
4	69	37	4	15	8.10	.20	-	-	.142	.034	-	-
5	83	33	3	13	^{3}8.23	.45	-	-	.134	.041	-	-
6	95	27	3	15	8.05	.58	-	-	.138	.064	-	-
7	97	5	-	5	8.21	.65	-	-	.173	.071	-	-
8	100	7	8	7	7.84	.72			.193	.034	-	-
All		231	48	122	7.80	-	-	-	.178	-	-	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 12. Beaker A17; Substrate type-Stringy red algae; Substrate-Pikea; Intensity-M; Source-Natural; Hatch-67%; Larvae viable-81%; Dead eggs-315.

Day	Time	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	-	0	-	-	-	-	-	-	-	-	-	-	-
2	0800	0	-	1	-	-	-	-	-	.167	.048	-	-
	0050	20	105		25	8.64	.30	-	-	-	-	-	-
3	1100	33	70	-	5	[20]8.82	.37	.171	.016	[20].157	.049	.270	.049
4	2045	45	67	57	15	9.15	.59	[11].168	.019	[11].148	.043	.225	.044
5	1535	58	68	16	16	8.88	.46	[8].161	.020	[8].149	.052	.232	.048
6	0020	64	32	11	20	8.89	.67	[4].159	.022	[4].131	.065	.238	.079
	1000	70	30		-	-	-	-	-	-	-	-	-
	0145	79	48	3	23	8.95	.47	.167	.018	.130	.051	.237	.050
7	1330	86	38	6	25	8.72	.48	.152	.022	.130	.069	.235	.059
	0115	87	9	7	9	9.24	.22	[5].155	.018	[4].090	.045	.192	.021
8	0915	93	32	4	24	8.87	.45	.160	.018	.106	.050	.230	.039
	2325	95	10	5	9	9.10	.77	[4].138	.028	[4].109	.092	.204	.066
9	1342	97	8	15	9	9.98	.57	.155	.030	.089	.093	.225	.092
	0045	100-	16	3	15	9.28	.50	.142	.014	.058	.043	.181	.044
10	1520	100	1	-	1	9.02	-	.133	-	.111	-	.181	-
All			534	128	196	8.95	-	.158	-	.129	-	.225	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 13. Beaker A16; Substrate type-Stringy red algae; Substrate-Pikea; Intensity-VH; Source-Natural; Hatch-23%; Larvae viable-88%; Dead eggs-338.

Day	Time	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	-	0	-	-	-	-	-	-	-	-	-	-	-
2	1125	47	42	-	20	[5]8.48	.44	[5].155	.015	[5].186	.042	.262	.065
3	0800	52	4	-	-	-	-	-	-	-	-	-	-
	2100	54	2	1	-	-	-	-	-	-	-	-	-
4	1145	87	29	2	25	8.61	.57	[1].170	.013	[1].179	.061	.273	.064
5	0130	89	2	3	2	8.03	-	.175	-	.183	-	.347	-
6	1823	94	5	1	5	8.97	.17	.150	.013	.112	.021	.208	.026
	2305	98	3	1	3	8.88	.45	[1].154	.017	.148	.033	.220	.010
7	1057	100	2	1	3	7.57	.66	.134	.019	.105	.066	.315	.067
	2130	100	-	3	2	-	-	.145	-	.124	-	.209	-
All			89	12	60	8.53	-	.160	-	.170	-	.264	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 14. Beaker All; Substrate type-Stringy red algae; Substrate-Polysiphonia; Intensity-L; Source-Natural; Hatch-92%; Larvae viable-91%; Dead eggs-70.

Day	Time	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	-	0	-	-	-	-	-	-	-	-	-	-	-
2	-	0	-	-	-	-	-	-	-	-	-	-	-
3	2045	0	0	2	-	-	-	-	-	-	-	-	-
4	0845	0	1	1	-	-	-	-	-	-	-	-	-
	2020	0	1	3	-	-	-	-	-	-	-	-	-
5	1425	4	26	7	25	8.51	.33	.159	.024	.163	.044	.258	.088
	0015	9	36	3	23	8.70	.29	.163	.020	.162	.035	.248	.026
6	1630	10	10	3	13	8.70	.42	.162	.023	.128	.029	.247	.082
	2202	10	3	8	9	[1] 8.22	.71	[1] .168	.027	[2] .156	.043	.325	.118
7	1353	19	64	2	26	9.22	.38	.153	.024	.101	.038	.194	.022
	2315	20	12	-	12	9.05	.46	.168	.017	.092	.033	.228	.033
8	1204	23	21	1	21	9.21	.66	[2] .128	.023	[1] .076	.038	.167	.041
	2320	33	71	1	24	[1] 9.43	.39	.163	.016	[1] .079	.031	.195	.026
9	1235	33	3	3	3	9.10	.16	.136	.017	.082	.029	.180	.021
	2320	91	432	5	15	9.70	.40	.152	.023	.040	.037	.165	.014
10	1400	95	35	8	24	[1] 9.15	.63	[1] .134	.034	[1] .055	.045	.187	.046
	2230	99	27	20	15	9.50	.34	.150	.015	.060	.038	.176	.018
11	1236	99	3	5	3	9.15	.25	.135	.013	.056	.057	.176	.003
12	-	99	-	-	-	-	-	-	-	-	-	-	-
13	1040	100-	5	2	5	9.30	.19	.157	.024	.016	.028	.197	.039
14	1025	100	1	-	1	8.61	-	.155	-	.007	-	.244	-
All			751	74	219	9.06	-	.152	-	.098	-	.211	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 15. Beaker B3; Substrate type-Stringy red algae; Substrate-Polysiphonia; Intensity-M; Source-Artificial-Small fish; Hatch-18%; Larvae viable-78%; Dead eggs-161.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	0	-	-	-	-	-	-	-	-	-	-	-
2	0	-	-	-	-	-	-	-	-	-	-	-
3	0	-	-	-	-	-	-	-	-	-	-	-
4	4	1	-	1	7.87	-	-	-	.153	-	-	-
5	7	1	-	1	7.13	-	-	-	.184	-	-	-
6	25	5	1	5	8.05	.30	-	-	.159	.027	-	-
7	50	7	-	7	8.01	.48	-	-	.151	.044	-	-
8	71	6	3	5	8.50	.29	-	-	.122	.041	-	-
9	82	3	3	6	8.14	.69	-	-	.128	.040	-	-
10	93	3	-	3	-	-	-	-	-	-	-	-
11	93	-	-	-	-	-	-	-	-	-	-	-
12	100	2	-	2	8.16	-	-	-	.168	-	-	-
13+	100	-	1	-	-	-	-	-	-	-	-	-
All		28	8	30	8.11	-	-	-	.145	-	-	-

Table 16. Beaker B2; Substrate type-Stringy red algae; Substrate-Polysiphonia; Intensity-H; Source-Artificial-Small fish; Hatch-10%; Larvae viable-53%; Dead eggs-452.

Day	Cum %	N			Length		Weight		Yolk		Condition	
		v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	0	-	-	-	-	-	-	-	-	-	-	-
2	0	-	1	-	-	-	-	-	-	-	-	-
3	15	4	1	4	8.03	.44	-	-	.187	.034	-	-
4	30	4	2	4	7.95	.20	-	-	.144	.034	-	-
5	33	1	5	1	8.20	-	-	-	.083	-	-	-
6	56	6	1	6	7.71	.31	-	-	.141	.100	-	-
7	78	6	4	6	7.94	.66	-	-	.096	.025	-	-
8	85	2	7	2	8.33	-	-	-	.087	-	-	-
9	100	4	3	4	8.98	.78	-	-	.082	.031	-	-
All		27	24	27	8.10	-	-	-	.123	-	-	-

Table 17. Beaker A15; Substrate type-Stringy red algae; Substrate-Rhodomela; Intensity-L; Source-Natural; Hatch-81%; Larvae viable-94%; Dead eggs-126.

		Cum	N			Length		Weight		Yolk		Condition	
Day	Time	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	-	0	-	-	-	-	-	-	-	-	-	-	-
2	-	0	-	-	-	-	-	-	-	-	-	-	-
3	-	0	-	-	-	-	-	-	-	-	-	-	-
4	2300	0+	1	1	-	-	-	-	-	-	-	-	-
5	1520	1	3	1	3	[1]8.07	.76	.124	.022	.121	.034	.206	.022
	0130	1	3	2	5	8.11	.47	.150	.015	.117	.025	.288	.076
6	1815	5	20	1	19	[1]8.85	.34	.156	.018	[1].133	.028	.227	.021
	2300	7	8	1	8	8.65	.30	[1].134	.015	[1].100	.024	.207	.031
7	1455	37	148	-	24	8.70	.57	.164	.016	.126	.045	.255	.019
	0040	43	28	2	25	9.03	.28	.160	.012	.102	.041	.217	.021
8	1403	49	29	-	25	9.16	.41	.154	.020	.087	.048	.203	.039
	0000	57	42	2	25	9.41	.51	.153	.029	.072	.048	.186	.043
9	1315	68	55	13	25	9.12	.37	.153	.018	.075	.061	.203	.033
	0027	98	146	3	16	9.50	.30	.144	.019	.028	.039	.168	.020
10	1503	99	6	1	3	[3]9.10	.69	[2].142	.021	.133	.063	[2].180	.048
	2340	100-	4	1	4	8.65	.87	.135	.022	.100	.071	.218	.078
11	-	100-	-	-	-	-	-	-	-	-	-	-	-
12	1000	100-	-	3	1	8.52	-	.174	-	.248	-	.280	-
13	1045	100	1	2	-	-	-	-	-	-	-	-	-
All			494	33	183	9.02	-	.153	-	.094	-	.211	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 18. Beaker A14; Substrate type-Stringy red algae; Substrate-Rhodomela; Intensity-H; Source-Natural; Hatch-49%; Larvae viable-93%; Dead eggs-309.

Day	Time	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	-	0	-	-	-	-	-	-	-	-	-	-	-
2	-	0	-	-	-	-	-	-	-	-	-	-	-
3	-	0	-	-	-	-	-	-	-	-	-	-	-
4	2400	2	6	2	6	7.41	.73	.162	.011	.194	.013	.425	.157
5	1510	3	3	2	5	7.74	.51	.160	.029	.216	.052	.344	.035
	0110	9	16	2	16	8.19	.39	.174	.016	.199	.031	.318	.036
6	1750	30	58	5	25	8.68	.35	.187	.012	.163	.014	.251	.033
	2240	34	12	3	15	8.31	.53	.163	.010	.180	.046	.290	.060
7	1440	49	43	2	25	8.89	.40	.166	.017	.134	.055	.240	.049
	2400	75	71	-	24	9.02	.58	.169	.015	.128	.055	.236	.061
8	1355	78	10	-	10	9.01	.32	.175	.019	.139	.046	.240	.033
	2350	86	20	2	20	9.11	.68	.158	.015	.102	.072	.219	.074
9	1300	89	8	1	8	9.04	.21	.166	.014	.112	.064	.226	.031
	2400	95	18	-	15	9.81	.43	.148	.016	.053	.057	.158	.025
10	1455	96	3	1	3	8.77	1.24	.135	.038	.035	.025	.205	.060
	2331	98	5	2	5	9.41	.82	.145	.024	.034	.033	.174	.046
11	1200	100-	5	-	5	9.13	.96	.156	.020	.151	.128	.219	.095
12	0940	100	1	1	1	10.16	-	.171	-	.064	-	.162	-
All			279	23	183	8.83	-	.166	-	.136	-	.248	-

Table 19. Beaker B22; Substrate type-Stringy red algae; Substrate-Rhodomela; Intensity-M; Source-Artificial-Large fish; Hatch-93%; Larvae viable-87%; Dead eggs-9.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	17	18	2	16	[1]7.49	.18	-	-	.228	.031	-	-
2	26	9	2	8	7.68	.35	-	-	.223	.030	-	-
3	38	12	5	11	7.71	.28	-	-	.174	.045	-	-
4	54	17	2	13	[1]8.38	.25	-	-	.143	.033	-	-
5	75	22	1	16	8.28	.64	-	-	.109	.040	-	-
6	92	18	2	15	[1]8.30	.58	-	-	.097	.044	-	-
7	94	2	1	2	7.79	-	-	-	.114	-	-	-
8	95	1	1	1	7.48	-	-	-	.128	-	-	-
9	100	5	-	3	8.81	.047	-	-	.012	.003	-	-
All		104	16	85	8.02	-	-	-	.151	-	-	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 20. Beaker B21; Substrate type-Stringy red algae; Substrate-Rhodomela; Intensity-H; Source-Artificial-Large fish; Hatch-51%; Larvae viable-84%; Dead eggs-210.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	17	32	4	23	[1]7.40	.32	-	-	.232	.037	-	-
2	22	9	9	11	7.47	.50	-	-	.249	.054	-	-
3	39	31	7	25	7.65	.47	-	-	.207	.034	-	-
4	61	40	2	15	8.12	.36	-	-	.166	.028	-	-
5	86	48	1	15	8.31	.32	-	-	.132	.037	-	-
6	94	14	4	14	8.34	.58	-	-	.128	.052	-	-
7	97	6	-	6	8.13	.89	-	-	.131	.056	-	-
8	99	3	7	2	8.13	-	-	-	.078	-	-	-
9	100	2	2	2	8.90	-	-	-	.042	-	-	-
All		185	36	113	7.87	-	-	-	.181	-	-	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 21. Beaker A10; Substrate type sea grasses; Substrate-Zostera; Intensity-VL; Source-Natural; Hatch-100%; Larvae viable-91%; Dead eggs-60.

Day	Time	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	-	0	-	-	-	-	-	-	-	-	-	-	-
2	0900	1	3	-	1	7.72	-	-	-	.199	-	-	-
3	0900	2	1	-	-	-	-	-	-	-	-	-	-
4	2345	3	3	-	3	8.06	.55	.168	.016	.206	.040	.323	.039
5	1415	4	2	-	2	8.17	-	.136	-	.166	-	.249	-
	0010	5	3	1	3	8.25	.39	.171	.024	.202	.076	.309	.074
6	1615	9	9	-	8	[1]8.26	.59	.161	.030	[1].180	.058	.284	.037
	2145	11	4	2	4	8.43	.39	.170	.010	.171	.020	.283	.027
7	1330	15	8	1	9	8.65	.47	.156	.031	.128	.063	.243	.050
	2305	18	7	-	6	8.66	.71	[1].163	.033	.095	.049	.246	.043
8	1200	22	9	-	9	9.27	.41	.149	.029	.081	.034	.189	.048
	2245	26	9	1	9	9.24	.39	.155	.027	.080	.029	.198	.045
9	1223	28	4	-	4	8.69	.53	.140	.009	.046	.033	.217	.042
	2300	64	81	1	15	9.50	.44	.150	.015	.045	.025	.176	.025
10	1140	71	16	1	16	8.98	.50	.139	.025	.035	.096	.196	.049
	2220	91	44	-	15	9.57	.94	.152	.017	.032	.021	.172	.013
11	1234	92	3	-	3	9.77	.40	.130	.013	.004	.002	.146	.005
	2100	93	2	-	2	9.22	-	.138	-	.007	-	.156	-
12	2030	100-	14	11	14	9.72	.52	.152	.025	.012	.011	.172	.038
13	1000	100-	3	3	-	-	-	-	-	-	-	-	-
14	1023	100	1	1	1	10.16	-	.168	-	.051	-	.160	-
All			223	22	124	9.07	-	.151	-	.075	-	.207	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 22. Beaker A8; Substrate type sea grasses; Substrate-Zostera; Intensity-L; Source-Natural; Hatch-42%; Larvae viable-61%; Dead eggs-8.

Day	Time	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	-	0	-	-	-	-	-	-	-	-	-	-	-
2	0900	3	4	-	3	7.64	.59	-	-	.209	.098	-	-
3	2100	3	1	-	-	-	-	-	-	-	-	-	-
4	2320	6	4	2	4	8.42	.22	.166	.012	[1].185	.036	.283	.022
5	1135	30	35	-	25	8.68	.26	.162	.017	.159	.039	.248	.030
	2335	61	45	2	24	[1]8.62	.42	[1].164	.017	.152	.048	[1].261	.063
6	1515	71	16	1	16	8.92	.47	.160	.017	.130	.036	.230	.048
	2134	73	2	2	2	8.46	-	.178	-	.156	-	.296	-
7	1245	84	16	3	12	[1]9.14	.33	[2].165	.009	[3].137	.042	.216	.027
	2240	89	8	-	6	9.26	.29	[2].159	.015	[2].127	.042	.201	.024
8	1146	90	2	2	2	8.74	-	[2].147	.005	[2].117	.038	.218	-
	0020	91	1	9	10	9.34	.47	.139	.014	.062	.042	.175	.030
9	1135	93	3	8	3	8.93	.50	.149	.021	.063	.037	.208	.025
	2240	100	10	5	1	9.59	-	.164	-	.098	-	.186	-
10	2300	100	-	1	-	-	-	-	-	-	-	-	-
11	1200	100	-	1	-	-	-	-	-	-	-	-	-
14	1000	100	-	1	-	-	-	-	-	-	-	-	-
All			147	37	108	8.82	-	.161	-	.138	-	.235	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 23. Beaker A7; Substrate type sea grasses; Substrate-Zostera; Intensity-M; Source-Natural; Hatch-61%; Larvae viable-92%; Dead eggs-243.

		Cum	N			Length		Weight		Yolk		Condition	
Day	Time	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	-	0	-	-	-	-	-	-	-	-	-	-	-
2	2100	0	-	1	-	-	-	-	-	-	-	-	-
3	0900	36	58	-	25	8.12	.27	.167	.014	.244	.033	.315	.044
	2100	36	1	-	-	-	-	-	-	-	-	-	-
4	0900	37	1	-	-	-	-	-	-	-	-	-	-
5	1115	40	5	-	5	8.26	.32	.170	.015	.205	.051	.304	.045
	2330	44	6	-	6	8.48	.47	.172	.010	.196	.050	.289	.072
6	1100	52	14	-	14	8.89	.29	.164	.016	.149	.035	.239	.026
7	1240	59	11	-	11	8.85	.46	.161	.016	.142	.041	.235	.042
	2225	85	42	-	25	8.96	-	.157	.016	.140	.051	.226	.038
8	1145	90	8	1	8	9.19	.27	.153	.022	.123	.075	.200	.042
	2205	97	11	5	11	8.84	.45	.166	.010	.103	.048	.243	.038
9	1000	97	-	6	-	-	-	-	-	-	-	-	-
	2200	98	2	-	-	-	-	-	-	-	-	-	-
10	1115	100	3	-	3	8.52	.92	.155	.011	.160	.081	.267	.117
13	1000	100	-	1	-	-	-	-	-	-	-	-	-
All			162	14	108	8.68	-	.163	-	.167	-	.257	-

Table 24. Beaker A9; Substrate type-Sea grasses; Substrate-Zostera; Intensity-M; Source-Natural; Hatch-69%; Larvae viable-85%; Dead eggs-167.

Day	Time	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	-	0	-	-	-	-	-	-	-	-	-	-	-
2	0900	1	3	-	2	8.33	-	-	-	.244	-	-	-
3	0800	1	1	-	-	-	-	-	-	-	-	-	-
4	2330	6	17	2	18	8.36	.29	.164	.019	[1].181	.045	.281	.031
5	1200	23	51	-	25	8.54	.29	.149	.018	.158	.047	.240	.031
6	1404	35	39	2	25	8.92	.32	.165	.015	.157	.043	.239	.031
	2140	35	1	-	1	8.77	-	.210	-	.317	-	.311	-
7	1318	39	13	1	12	8.81	.39	[1].151	.022	[1].123	.061	.221	.039
	2259	45	18	2	19	8.86	.67	[1].159	.032	[1].036	.084	.232	.058
8	1150	47	5	1	6	8.93	.38	.152	.009	.128	.023	.215	.023
	2235	60	43	1	25	9.24	.39	.158	.018	.085	.043	.203	.037
9	1155	69	29	3	23	9.06	.47	.144	.017	.092	.061	.197	.038
	2245	95	83	17	15	9.43	.46	.150	.018	.055	.054	.179	.032
10	1125	97	7	2	7	9.77	.46	.153	.016	.065	.055	.166	.030
	2138	99	6	14	6	9.82	.46	.157	.015	.030	.039	.169	.036
11	1232	100	2	12	2	8.77	-	.144	-	.081	-	.238	-
All			318	57	186	8.93	-	.155	-	.122	-	.221	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 25. Beaker A6; Substrate type-Sea grasses; Substrate-Zostera; Intensity-H; Source-Natural; Hatch-57%; Larvae viable-95%; Dead eggs-175.

Day	Time	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	-	0	-	-	-	-	-	-	-	-	-	-	-
2	-	0	-	-	-	-	-	-	-	-	-	-	-
3	2100	1	1	1	-	-	-	-	-	-	-	-	-
4	2100	2	4	1	2	8.93	-	[4].177	.015	[4].235	.053	.250	-
5	1110	4	3	1	3	8.85	.25	.178	.015	.168	.053	.257	.027
	2320	9	11	1	11	8.86	.31	.172	.011	.176	.038	.248	.025
6	1415	12	6	-	6	8.80	.60	.156	.015	.126	.045	.234	.054
	2115	77	141	2	25	8.73	.54	.166	.019	.156	.056	.253	.050
7	1215	92	32	1	25	8.63	.51	.171	.013	.195	.055	.271	.054
	2220	94	6	-	6	8.36	.70	.164	.011	.192	.050	.296	.068
8	1140	95	1	-	1	7.15	-	.191	-	.310	-	.522	-
	2155	95	1	-	1	8.03	-	.183	-	.252	-	.352	-
9	2230	97	4	3	4	9.00	.63	.157	.003	.117	.086	.220	.049
10	2137	98	2	1	2	9.06	-	.175	-	.182	-	.236	-
11	2055	100	4	-	1	8.03	-	.165	-	.229	-	.318	-
13	1000	100	-	1	-	-	-	-	-	-	-	-	-
All			216	12	87	8.69	-	.169	-	.178	-	.262	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 26. Beaker A5; Substrate type-Sea grasses; Substrate-Zostera; Intensity-VH; Source-Natural; Hatch-12%; Larvae viable-80%; Dead eggs-388.

		Cum	N			Length		Weight		Yolk		Condition	
Day	Time	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	-	0	-	-	-	-	-	-	-	-	-	-	-
2	1000	4	2	-	-	-	-	-	-	-	-	-	-
3	-	4	-	-	-	-	-	-	-	-	-	-	-
4	-	4	-	-	-	-	-	-	-	-	-	-	-
5	2315	4	-	2	1	8.52	-	-	-	.227	-	-	-
6	1410	9	2	-	2	8.57	-	.156	-	.147	-	.248	-
	2102	15	3	-	3	8.50	.13	.155	.015	.161	.014	.252	.015
7	1205	28	6	-	6	8.46	.47	.155	.010	.140	.040	.260	.047
	2210	50	10	2	10	[1]8.75	.60	[2].167	.022	[3].160	.043	.249	.049
8	1135	[1]57	3	1	3	8.81	.21	[1].155	.015	[1].138	.035	.235	.027
	2150	67	5	1	5	9.13	.56	[1].170	.012	[1].128	.061	.223	.039
9	1118	83	7	1	8	8.85	.46	.160	.027	.138	.093	.235	.065
	2225	96	6	1	6	9.11	.65	.147	.018	.110	.024	.197	.033
10	2135	100	2	1	2	9.26	-	.164	-	.155	-	.207	-
11	1200	100	-	1	-	-	-	-	-	-	-	-	-
14	-	100	-	1	-	-	-	-	-	-	-	-	-
All			46	11	46	8.81	-	.160	-	.143	-	.236	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 27. Beaker B32; Substrate type-Sea grasses; Substrate-Zostera; Intensity-M; Source-Artificial-Large fish; Hatch-91%; Larvae viable-87%; Dead eggs-11.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	4	4	2	4	7.72	.18	.160	.008	.260	.040	.348	.029
2	10	5	3	5	7.15	.49	.155	.011	.291	.076	.437	.106
3	24	13	2	13	8.01	.43	.159	.005	.184	.044	.314	.058
4	42	17	-	16	8.52	.36	.139	.005	.156	.041	.226	.028
5	49	6	-	6	7.86	.99	.135	.005	.188	.071	.308	.136
6	75	24	2	14	8.60	.64	.128	.007	.132	.064	.210	.061
7	79	4	1	4	8.16	.87	.135	.004	.149	.062	.262	.085
8	88	8	2	8	8.81	.35	.126	.007	.056	.069	.186	.034
9	100	11	1	11	8.71	.64	.126	.005	.087	.077	.199	.053
10+	100	-	1	-	-	-	-	-	-	-	-	-
All		92	14	81	8.32	-	.139	-	.153	-	.257	-

Table 28. Beaker B31; Substrate type-Sea grasses; Substrate-Zostera; Intensity-H; Source-Artificial-Large fish; Hatch-31%; Larvae viable-81%; Dead eggs-167.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	2	1	1	1	7.15	-	.150	-	.226	-	.410	-
2	2	-	2	-	-	-	-	-	-	-	-	-
3	7	3	3	3	7.40	.19	.157	.004	.268	.010	.398	.031
4	20	8	2	8	8.36	.63	.143	.005	.170	.049	.253	.068
5	48	17	2	15	7.93	.98	.133	.011	.159	.076	.293	.125
6	80	19	2	15	8.28	.49	.129	.007	.165	.071	.233	.055
7	82	1	2	1	7.71	-	.132	-	.190	-	-	-
8	88	4	-	3	8.06	1.07	.131	.005	.146	.122	.281	.133
9	100	7	-	7	9.33	.40	.128	.007	.057	.068	.160	.030
All		60	14	53	8.24	-	.134	-	.156	-	.259	-

Table 29. Beaker B34; Substrate type-Sea grasses; Substrate-Zostera; Intensity-M; Source-Artificial-Small fish; Hatch-38%; Larvae viable-80%; Dead eggs-185.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	2	2	2	2	7.44	-	.165	-	.283	-	.402	-
2	7	4	2	4	7.75	.81	.171	.006	.256	.055	.390	.145
3	20	12	-	12	7.67	.70	.167	.017	.264	.056	.392	.122
4	64	39	14	15	8.30	.36	.157	.009	.176	.050	.277	.039
5	74	9	1	9	7.72	.77	.167	.006	.232	.084	.384	.124
6	87	11	-	11	8.41	.74	.159	.011	.151	.090	.283	.101
7	91	4	-	4	7.58	.49	.156	.009	.226	.069	.366	.089
8	91	-	2	-	-	-	-	-	-	-	-	-
9	99	7	1	6	8.54	.51	.159	.002	.152	.035	.261	.059
10	100	1	1	1	7.38	-	.101	-	.243	-	.252	-
All		89	23	64	8.02	-	.161	-	.206	-	.329	-

Table 30. Beaker B33; Substrate type-Sea grasses; Substrate-Zostera; Intensity-H; Source-Artificial-Small fish; Hatch-15%; Larvae viable-53%; Dead eggs-210.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	6	2	1	2	6.83	-	.163	-	.304	-	.544	.226
2	15	3	1	3	7.87	.33	.167	.012	.225	.012	.347	.066
3	25	3	-	3	7.70	.55	.179	.004	.277	.079	.402	.101
4	59	11	-	10	7.89	.55	.162	.005	.258	.061	.353	.138
5	81	7	2	7	8.26	.65	.143	.013	.148	.033	.258	.046
6	94	4	-	3	[1]8.55	.27	.129	.008	[1].114	.028	.202	.017
7	100	2	-	2	8.28	-	.151	-	.167	-	.267	-
8+	100	-	2	-	-	-	-	-	-	-	-	-
All		32	6	30	8.00	-	.156	-	.210	-	.327	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 31. Beaker A13; Substrate type-Rockweeds; Substrate-Fucus; Intensity-L; Source-Natural; Hatch-92%; Larvae viable-96%; Dead eggs-11.

Day	Time	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	-	0	-	-	-	-	-	-	-	-	-	-	-
2	-	0	-	-	-	-	-	-	-	-	-	-	-
3	-	0	-	-	-	-	-	-	-	-	-	-	-
4	-	0	-	-	-	-	-	-	-	-	-	-	-
5	1502	1	2	-	2	8.61	-	.144	-	.137	-	.224	-
	0100	2	5	-	5	9.12	.16	.184	.021	.169	.042	.241	.018
6	1725	6	10	-	10	8.94	.22	.161	.016	.132	.030	.226	.024
	2236	6	1	-	1	9.27	-	.175	-	.142	-	.219	-
7	1425	10	14	1	15	9.12	.35	.164	.017	.100	.042	.215	.020
	2330	24	42	-	24	[1]9.25	.37	.154	.022	[1].074	.044	.195	.022
8	1250	28	11	-	11	9.22	.22	.149	.008	.077	.022	.191	.012
	2330	30	8	-	8	9.37	.44	.152	.021	.032	.016	.185	.021
9	1255	31	1	2	1	10.00	-	.172	-	.012	-	.005	-
	2350	91	186	2	15	9.51	.31	.153	.015	.031	.030	.177	.013
10	1435	95	12	1	9	[3]9.47	.44	[3].154	.021	.066	.065	.183	.035
	2328	98	8	-	5	9.62	.33	.169	.027	.061	.081	.191	.018
11	1250	99	3	-	3	9.65	.52	.154	.006	.040	.038	.173	.021
	2110	99	1	-	1	9.43	-	.107	-	.001	-	.127	-
12	0539	100	3	5	3	9.51	.14	.146	.029	.084	.054	.169	.028
13+	-	100	-	2	-	-	-	-	-	-	-	-	-
All			307	13	113	9.21	-	.157	-	.077	-	.195	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 32. Beaker A12; Substrate type-Rockweeds; Substrate-Fucus; Intensity-VH; Source-Natural; Hatch-54%; Larvae viable-86%; Dead eggs-333.

Day	Time	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	-	0	-	-	-	-	-	-	-	-	-	-	-
2	-	0	-	-	-	-	-	-	-	-	-	-	-
3	2300	1	4	-	3	8.31	.19	.161	.021	.195	.059	.281	.035
4	2350	28	90	7	26	8.33	.53	.166	.017	.209	.046	.295	.072
5	1445	31	11	1	12	8.46	.60	.157	.023	[1].169	.058	.264	.057
	0025	45	45	3	24	8.63	.38	.163	.067	.162	.037	.253	.037
6	1650	50	17	11	19	[1]8.38	.62	.163	.017	[1].172	.068	.292	.086
	2225	54	15	1	15	8.62	.56	.166	.021	.168	.074	.268	.080
7	1402	72	57	3	25	9.06	.37	.169	.013	.137	.042	.229	.031
	2325	90	62	-	25	8.98	.41	.153	.021	.146	.040	.213	.037
8	1220	92	7	-	6	8.83	.71	.163	.016	.115	.059	.251	.097
	2325	93	3	7	3	8.66	.85	.179	.029	.157	.098	.294	.133
9	1245	95	5	5	4	[1]9.43	.33	.164	.016	[1].108	.067	.206	.021
	2330	99	13	7	12	9.22	.86	.155	.017	.072	.053	.206	.061
10	1430	99	2	3	2	8.93	-	.146	-	.066	-	.204	-
	2320	99	1	-	1	8.69	-	.137	-	.085	-	.209	-
11	1240	100-	1	3	1	8.44	-	.150	-	.248	-	.249	-
	2105	100	1	1	1	9.43	-	.107	-	.001	-	.128	-
12+	-	100	-	1	-	-	-	-	-	-	-	-	-
All			334	53	179	8.71	-	.162	-	.162	-	.253	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 33. Beaker B8; Substrate type-Rockweeds; Substrate-Fucus; Intensity-M; Source-Artificial-Large fish; Hatch-49%; Larvae viable-91%; Dead eggs-107.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	10	9	2	8	6.94	.64	.146	.013	.245	.037	.457	.144
2	20	10	-	7	[3]7.59	.43	.154	.005	[3].231	.037	.357	.075
3	24	4	-	4	7.97	.103	.153	.008	.183	.045	.302	.023
4	43	17	3	15	7.73	.46	.146	.004	.171	.047	.324	.070
5	67	23	3	15	7.77	.59	.146	.020	.183	.055	.321	.093
6	77	9	-	9	7.86	.65	.130	.007	.172	.062	.218	.075
7	79	2	1	2	8.28	-	.131	-	.136	-	.232	-
8	83	4	-	4	7.97	.75	.138	.008	.165	.057	.287	.095
9	96	12	-	12	8.31	.74	.128	.005	.129	.067	.236	.083
10	96	-	-	-	-	-	-	-	-	-	-	-
11	100	4	-	3	7.98	.76	.102	.007	.170	.046	.208	.055
All		94	9	79	7.79	-	.140	-	.181	-	.305	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 34. Beaker B9; Substrate type-Rockweeds; Substrate-Fucus; Intensity-H; Source-Artificial-Large fish; Hatch-23%; Larvae viable-83%; Dead eggs-324.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	1	1	-	1	7.79	-	.101	-	.214	-	.215	-
2	5	3	-	3	7.08	.39	.172	.013	.292	.045	.493	.111
3	5	-	-	-	-	-	-	-	-	-	-	-
4	11	5	1	5	7.36	.52	.166	.002	.246	.046	.425	.080
5	23	9	3	9	7.30	.69	.167	.005	.253	.065	.463	.140
6	40	14	2	13	[1]7.94	.52	.163	.011	.231	.081	.341	.074
7	45	4	4	4	7.93	.44	.160	.002	.217	.066	.325	.059
8	71	21	2	9	[6]7.98	.58	.149	.021	[6].180	.067	.289	.089
9	94	18	4	15	7.97	.76	.147	.010	.169	.073	.309	.109
10	100	5	1	5	7.72	.58	.158	.006	.175	.072	.355	.101
All		80	17	64	7.78	-	.157	-	.208	-	.355	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 35. Beaker B10; Substrate type-Rockweeds; Substrate-Fucus; Intensity-M; Source-Artificial-Small fish; Hatch-54%; Larvae viable-93%; Dead eggs-152.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	4	6	4	4	[2]7.47	.34	.149	.033	.252	.099	.340	.107
2	5	3	1	3	7.65	.58	.170	.010	.268	.030	.385	.069
3	15	16	-	14	7.95	.64	.156	.010	.195	.056	.324	.087
4	41	42	3	15	8.37	.31	.150	.010	.151	.053	.258	.036
5	80	65	3	14	[1]8.40	.58	.143	.013	[1].141	.089	.256	.090
6	98	28	-	15	8.48	.61	.149	.012	.116	.049	.253	.062
7	98	1	1	1	8.20	-	.144	-	.158	-	.262	-
8	100	3	-	3	8.36	.16	-	-	.054	.025	-	-
All		164	12	69	8.21	-	.150	-	.157	-	.281	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 36. Beaker B11; Substrate type-Rockweeds; Substrate-Fucus; Intensity-H; Source-Artificial-Small fish; Hatch-16%; Larvae viable-90%; Dead eggs-277.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	4	2	1	2	7.01	-	.153	-	.266	-	.445	-
2	6	1	2	3	6.91	.97	.155	.002	.263	.094	.501	.174
3	15	4	-	3	[1]7.44	.27	.153	.003	.233	.016	.368	.045
4	57	20	1	15	7.41	.47	.140	.005	.197	.055	.354	.078
5	87	14	1	14	7.73	.53	.132	.008	.163	.056	.296	.091
6	100	6	-	5	8.18	.36	.131	.006	.147	.077	.242	.043
All		47	5	42	7.55	-	.139	-	.190	-	.337	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 37. Beaker A3; Substrate type-Kelps; Substrate-Agarum; Intensity-VL; Source-Natural; Hatch-88%; Larvae viable-92%; Dead eggs-53.

Day	Time	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	1735	6	23	-	23	8.19	.34	-	-	.193	.035	-	-
	2100	12	19	-	15	[4]8.25	.37	-	-	.185	.030	-	-
2	1100	14	9	-	7	[1]8.02	.89	.163	.027	[1].200	.066	.357	.179
	2135	26	42	-	25	8.61	.34	.167	.021	.160	.042	.262	.036
3	0800	26	2	5	-	-	-	-	-	-	-	-	-
4	1100	29	10	1	9	8.50	.73	.163	.010	[1].128	.048	.280	.111
	2215	40	39	3	24	[1]8.84	.52	[1].155	.018	[5].140	.054	.234	.067
5	1015	49	33	1	25	9.01	.35	.167	.016	.133	.040	.229	.029
	2245	50	3	-	3	9.13	.71	.152	.016	.174	.050	.208	.069
6	1330	58	31	-	25	9.40	.46	.158	.016	.088	.064	.193	.038
	2045	59	2	-	2	9.27	-	.171	-	.121	-	.211	-
7	1140	60	6	1	6	8.73	.28	[1].138	.026	[1].112	.079	.204	.050
	2145	63	9	-	9	9.27	.63	.155	.034	.071	.054	.194	.038
8	1100	75	43	2	25	9.40	.46	.154	.017	.071	.057	.188	.033
	2105	87	43	7	26	[1]9.16	.58	[1].152	.016	.059	.070	[1].203	.052
9	1035	96	33	4	20	[4]9.45	.51	[1].146	.019	[5].098	.078	.174	.034
	2130	99	11	4	9	8.91	.37	.151	.015	.088	.065	.215	.031
10	1045	100-	1	-	1	8.37	-	.121	-	.139	-	.206	-
	2125	100-	2	-	2	8.24	-	.155	-	.238	-	.278	-
11	1230	100	1	-	1	10.25	-	.149	-	.115	-	.138	-
12+	-	100	-	2	-	-	-	-	-	-	-	-	-
All			362	30	257	8.91	-	.157	-	.123	-	.219	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 38. Beaker A4; Substrate type-Kelps; Substrate-Agarum; Intensity-L; Source-Natural; Hatch-75%; Larvae viable-94%; Dead eggs-189.

Day	Time	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	1745	4	19	-	19	8.33	.34	-	-	[2].224	.059	-	-
	2100	8	24	1	24	8.51	.28	[1].179	.022	[1].219	.051	.290	.044
2	2150	11	18	-	16	8.39	.27	-	-	.169	.033	-	-
3	0800	12	1	-	-	-	-	-	-	-	-	-	-
4	1125	16	22	-	22	9.06	.24	.174	.013	.136	.034	.234	.021
	2115	28	66	1	25	9.08	.41	.167	.017	.123	.046	.226	.039
5	1045	51	122	5	25	8.93	.39	.147	.019	.103	.043	.206	.027
	2250	64	70	9	25	9.18	.57	.155	.016	.089	.048	.204	.046
6	1345	70	34	-	24	9.37	.53	[1].152	.021	[1].092	.070	.192	.047
	2057	70	1	2	2	8.81	-	.158	-	.100	-	.234	-
7	1156	71	7	-	7	8.75	.67	.158	.015	.136	.058	.240	.039
	2210	74	12	2	13	9.20	.76	[1].153	.020	[1].084	.063	.205	.067
8	1120	77	15	5	14	[1]9.48	.55	.149	.011	[1].071	.055	.180	.035
	2135	81	24	-	22	9.45	.48	[1].161	.021	[1].060	.083	.197	.042
9	1108	84	16	5	13	9.69	.47	.143	.020	[1].079	.071	.158	.028
	2215	97	72	2	14	[1]9.41	.50	.141	.020	[1].067	.069	.174	.036
10	1100	98	4	1	4	8.89	.49	.144	.013	.098	.082	.208	.045
	2129	98	2	-	2	9.55	-	.139	-	.074	-	.161	-
11	2050	99	6	-	3	8.39	.66	.123	.004	.116	.010	.215	.059
12	0935	100	3	-	3	9.02	.36	.125	.007	.110	.069	.171	.020
13+	-	100	-	1	-	-	-	-	-	-	-	-	-
All			538	34	277	9.04	-	.157	-	.119	-	.211	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 39. Beaker A2; Substrate type-Kelps; Substrate-Agarum; Intensity-H; Source-Natural; Hatch-54%; Larvae viable-80%; Dead eggs-263.

Day	Time	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	1730	7	19	-	19	8.17	.45	-	-	.207	.035	-	-
	2100	12	12	-	12	8.10	.35	.167	.016	[2].212	.050	.316	.045
2	0800	20	19	-	15	[1]8.23	.33	[1].169	.031	.238	.049	[1].304	.061
	2100	22	5	-	4	8.03	.45	.171	.016	.227	.046	.332	.044
3	0940	25	9	1	9	8.43	.35	.170	.022	.199	.041	.287	.054
	2200	31	13	3	16	8.12	.73	.176	.014	.201	.037	.337	.109
4	1015	74	108	4	25	8.82	.36	.174	.023	.176	.065	.255	.040
	2250	92	46	4	25	8.88	.67	.164	.019	.157	.051	.244	.077
5	1010	94	5	5	4	9.26	.24	[2].152	.019	[2].130	.056	.197	.035
	2230	95	3	1	3	8.61	.41	.179	.036	.234	.058	.282	.061
6	1320	98	7	2	4	9.04	.66	.166	.025	.111	.021	.240	.053
7	1140	98	1	1	1	9.18	-	.128	-	.015	-	.160	-
	2140	99	1	-	1	8.37	-	-	-	.214	-	-	-
8	1050	100-	2	1	2	7.71	-	[1].179	.008	.277	.042	.400	-
	2155	100	1	4	1	8.05	-	.174	-	.370	-	.333	-
9	-	100	-	3	-	-	-	-	-	-	-	-	-
All			251	29	141	8.48	-	.169	-	.192	-	.281	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 40. Beaker A1; Substrate type-Kelps; Substrate-Agarum; Intensity-VH; Source-Natural; Hatch-9%; Larvae viable-93%; Dead eggs-552.

Day	Time	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	1720	19	9	-	9	8.05	.68	-	-	.222	.062	-	-
	2100	41	11	-	10	[1]7.72	.46	[1].168	.033	.241	.048	.383	.114
2	0900	64	10	-	9	7.89	.43	.164	.040	.248	.051	.344	.125
	2100	76	7	-	7	8.28	.47	.178	.023	.239	.083	.319	.068
3	2240	84	4	2	5	7.84	.62	.160	.017	.178	.053	.349	.122
4	1030	91	2	1	2	9.31	-	.188	.013	[1].201	-	.230	-
	2245	98	5	1	4	8.18	.40	.160	.019	.164	.037	.293	.026
5	-	98	-	-	-	-	-	-	-	-	-	-	-
6	1300	100	1	-	1	9.02	-	.148	-	.098	-	.201	-
All			49	4	47	8.04	-	.168	-	.220	-	.335	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 41. Beaker B7; Substrate type-Kelps; Substrate-Nereocystis; Intensity-M; Source-Artificial-Large fish; Hatch-71%; Larvae viable-91%; Dead eggs-70.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	4	6	1	6	7.15	.70	.145	.030	.277	.029	.417	.151
2	9	8	2	8	7.78	.41	-	-	.255	.050	-	-
3	14	7	-	6	8.02	.40	-	-	.221	.049	-	-
4	18	6	2	6	8.40	.15	-	-	.179	.047	-	-
5	38	31	3	14	8.14	.68	-	-	.193	.069	-	-
6	76	59	1	15	8.69	.57	-	-	.145	.063	-	-
7	92	24	4	15	8.59	.53	-	-	.157	.093	-	-
8	100	13	2	12	8.21	.43	-	-	.0615	.047	-	-
9+	100	-	1	-	-	-	-	-	-	-	-	-
All		154	16	82	8.24	-	-	-	.163	-	-	-

Table 42. Beaker B6; Substrate type-Kelps; Substrate-Nereocystis; Intensity-M; Source-Artificial-Small fish; Hatch-79%; Larvae viable-97%; Dead eggs-40.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	2	3	-	3	7.54	.50	.141	.015	.198	.043	.330	.036
2	3	1	2	1	7.05	-	-	-	.141	-	-	-
3	6	5	-	6	8.17	.56	-	-	.163	.032	-	-
4	35	40	-	16	8.31	.29	-	-	.135	.029	-	-
5	77	61	-	14	8.57	.26	-	-	.123	.026	-	-
6	87	13	1	13	8.58	.66	-	-	.115	.072	-	-
7	89	3	-	3	8.20	1.15	-	-	.164	.110	-	-
8	92	4	2	4	8.64	.31	-	-	.102	.106	-	-
9	100	12	-	11	^{1}9.10	.39	-	-	.061	.065	-	-
All		142	5	71	8.49	-	-	-	.122	-	-	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 43. Beaker B36; Substrate type-Other; Substrate-Plastic; Intensity-M; Source-Artificial-Large fish; Hatch-64%; Larvae viable-93%; Dead eggs-73.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	0	-	-	-	-	-	-	-	-	-	-	-
2	0	-	-	-	-	-	-	-	-	-	-	-
3	2	2	-	2	7.76	-	.167	-	.226	-	.358	-
4	3	1	-	1	7.87	-	.155	-	.180	-	.319	-
5	6	4	-	4	8.03	.18	.168	.004	.167	.056	.325	.015
6	16	12	1	12	8.44	.21	.158	.009	.135	.026	.263	.022
7	23	8	1	7	8.67	.12	.134	.013	.101	.029	.204	.015
8	45	26	3	14	[1]8.95	.44	.148	.005	[1].090	.064	.210	.050
9	91	53	-	15	8.92	.65	.155	.006	.083	.059	.227	.065
10	98	9	2	8	[1]8.27	.78	.166	.006	[1].146	.072	.326	.097
11	98	-	-	-	-	-	-	-	-	-	-	-
12	98	-	-	-	-	-	-	-	-	-	-	-
13	98	-	-	-	-	-	-	-	-	-	-	-
14	100	2	2	2	8.35	-	.153	-	.217	-	.632	-
All		117	9	63	8.87	-	.159	-	.123	-	.272	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 44. Beaker B35; Substrate type-Other; Substrate-Plastic; Intensity-H; Source-Artificial-Large fish; Hatch-38%; Larvae viable-97%; Dead eggs-108.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	0	-	-	-	-	-	-	-	-	-	-	-
2	0	-	-	-	-	-	-	-	-	-	-	-
3	2	1	-	1	7.56	-	-	-	.253	-	-	-
4	11	6	-	6	7.71	.46	.163	.004	.247	.049	.365	.073
5	12	1	-	1	8.20	-	.170	-	.211	-	.309	-
6	25	8	-	8	8.39	.29	.166	.006	.165	.042	.282	.029
7	45	13	-	12	[1]8.21	.61	.137	.014	[1].164	.060	.253	.057
8	65	13	-	13	8.11	.65	.154	.005	.177	.062	.301	.085
9	91	17	2	15	8.47	.81	.165	.007	.146	.084	.289	.098
10	94	2	-	2	-	-	-	-	-	-	-	-
11	94	-	-	-	-	-	-	-	-	-	-	-
12	94	-	-	-	-	-	-	-	-	-	-	-
13	94	-	-	-	-	-	-	-	-	-	-	-
14	94	-	-	-	-	-	-	-	-	-	-	-
15	100	4	-	4	-	-	-	-	-	-	-	-
All		65	2	62	8.22	-	.156	-	.173	-	.292	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 45. Beaker B4; Substrate type-Other; Substrate-Plastic; Intensity-M; Source-Artificial-Small fish; Hatch-69%; Larvae viable-92%; Dead eggs-59.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	0	-	-	-	-	-	-	-	-	-	-	-
2	1	1	-	2	6.60	-	.136	-	.196	-	.273	-
3	3	3	-	3	6.91	.41	.127	.005	.159	.019	.392	.086
4	16	15	1	15	7.43	.13	.138	.003	.131	.017	.338	.019
5	23	9	2	8	[1]7.52	.28	.129	.002	.105	.025	.305	.035
6	25	2	1	2	7.99	-	.110	-	.096	-	.214	-
7	30	6	1	5	8.84	.44	.112	.003	.097	.025	.210	.083
8	37	9	1	8	8.02	.45	.116	.004	.082	.030	.228	.036
9	61	29	4	15	8.37	.57	.103	.004	.052	.022	.184	.064
10	90	36	-	15	8.05	.37	.113	.002	.069	.038	.218	.030
11	97	8	-	8	7.79	.93	.107	.005	.093	.042	.359	.167
12	98	2	-	2	7.87	-	.106	-	.030	.008	.217	-
13	100	2	-	2	7.50	-	.112	-	.125	.009	.266	-
All		122	10	85	7.87	-	.118	-	.093	-	.254	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 46. Beaker B16; Substrate type-Other brown algae; Substrate-Sargassum; Intensity-M; Source-Artificial-Large fish; Hatch-87%; Larvae viable-96%; Dead eggs-61.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	6	23	4	23	[1]7.65	.22	.136	.014	[1].219	.021	.304	.041
2	12	23	-	22	[1]7.92	.33	.145	.005	[1].187	.030	.296	.038
3	24	46	3	26	8.19	.16	.135	.005	.154	.023	.247	.016
4	38	55	1	15	8.45	.27	.141	.006	.112	.035	.235	.027
5	57	75	1	15	[1]8.74	.24	.132	.005	[1].077	.016	.199	.019
6	85	110	2	14	[1]8.89	.29	.127	.006	[1].070	.032	.183	.023
7	87	7	-	7	8.61	.80	.124	.006	.094	.080	.207	.081
8	90	13	3	13	8.97	.59	.119	.004	.040	.051	-	-
9	97	26	-	17	9.30	.26	-	-	.018	.027	-	-
10	97	3	1	3	8.31	.88	.119	.023	.139	.093	.210	.047
11	99	8	-	7	8.69	.66	.127	.005	.143	.053	.201	.057
12	100	2	-	2	8.52	-	-	-	.010	-	-	-
All		391	15	164	8.43	-	.134	-	.122	-	.246	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 47. Beaker B12; Substrate type-Other brown algae; Substrate-Sargassum; Intensity-M; Source-Artificial-Small fish; Hatch-86%; Larvae viable-86%; Dead eggs-63.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	0	-	5	-	-	-	-	-	-	-	-	-
2	3	9	6	9	7.43	.41	.161	.006	.190	.017	.400	.086
3	10	24	15	23	8.02	.31	.152	.006	.176	.021	.297	.038
4	48	121	17	15	7.96	.36	.148	.003	.140	.032	.297	.043
5	65	53	2	15	8.30	.40	.144	.006	.114	.030	.251	.039
6	92	85	2	14	8.54	.22	.136	.006	.066	.027	.220	.017
7	96	11	4	9	7.82	.34	.143	.007	.169	.065	.303	.047
8	96	3	1	3	8.09	.33	.146	.003	.121	.017	.278	.030
9	100	12	1	11	8.30	.65	.149	.006	.127	.063	.272	.093
All		318	53	99	8.09	-	.147	-	.139	-	.286	-

Table 48. Beaker B28; Substrate type-Leafy red algae; Substrate-Rhodymenia; Intensity-M; Source-Artificial-Large fish; Hatch-59%; Larvae viable-95%; Dead eggs-107.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	3	5	-	4	[1]7.39	.38	-	-	.301	.022	-	-
2	4	1	1	1	8.20	-	-	-	.219	-	-	-
3	9	7	-	7	8.00	.44	-	-	.252	.054	-	-
4	25	23	3	15	8.18	.46	-	-	.201	.057	-	-
5	51	39	1	15	8.38	.48	-	-	.138	.058	-	-
6	86	51	-	13	8.58	.42	-	-	.126	.076	-	-
7	89	4	1	5	8.28	1.21	-	-	.130	.071	-	-
8	92	4	1	4	7.91	.38	-	-	.135	.107	-	-
9	98	9	1	9	8.64	.59	-	-	.166	.099	-	-
10	99	2	-	2	8.01	-	-	-	.148	-	-	-
11	100	1	-	1	7.87	-	-	-	.278	-	-	-
All		146	8	76	8.26	-	-	-	.173	-	-	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 49. Beaker B27; Substrate type-Leafy red algae; Substrate-Rhodymenia; Intensity-H; Source-Artificial-Large fish; Hatch-8%; Larvae viable-88%; Dead eggs-366.

Day	Cum %	N v.	N mv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	4	1	-	1	7.48	-	-	-	.310	-	-	-
2	7	1	1	1	6.10	-	-	-	.391	-	-	-
3	7	-	-	-	-	-	-	-	-	-	-	-
4	29	6	3	5	7.82	1.13	-	-	[1].241	.090	-	-
5	54	7	1	7	8.13	.72	-	-	.192	.069	-	-
6	61	2	-	2	7.75	-	-	-	.242	-	-	-
7	68	2	1	2	8.16	-	-	-	.155	-	-	-
8	82	4	1	4	8.43	.20	-	-	.169	.031	-	-
9	89	2	1	2	7.44	-	-	-	.204	-	-	-
10	100	3	-	3	7.83	.66	-	-	.257	.073	-	-
All		146	8	27	7.91	-	-	-	.208	-	-	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 50. Beaker B1; Substrate type-Leafy red algae; Substrate-Rhodymenia; Intensity-M; Source-Artificial-Large fish; Hatch-72%; Larvae viable-87%; Dead eggs-70.

Day	Cum %	N v.	N nv.	N samp.	Length $\bar{x}$	Length σ	Weight $\bar{x}$	Weight σ	Yolk $\bar{x}$	Yolk σ	Condition $\bar{x}$	Condition σ
1	3	4	4	5	7.21	.56	.151	.006	.248	.027	.417	.117
2	5	4	1	4	7.79	.40	-	-	.196	.027	-	-
3	12	11	-	10	8.26	.19	-	-	.181	.021	-	-
4	28	25	1	15	8.16	.34	-	-	.125	.030	-	-
5	33	9	-	9	8.34	.52	-	-	.159	.033	-	-
6	47	22	2	15	8.56	.52	-	-	.142	.045	-	-
7	49	3	1	3	8.01	.26	-	-	.180	.016	-	-
8	74	39	-	17	8.92	.51	-	-	.069	.045	-	-
9	99	40	8	15	8.85	.70	-	-	.070	.064	-	-
10	99	1	4	1	8.78	-	-	-	.020	-	-	-
11	100	1	1	1	7.95	-	-	-	.129	-	-	-
12+	100	-	1	-	-	-	-	-	-	-	-	-
All		159	23	95	8.43	-	-	-	.128	-	-	-

Table 51. Beaker B5; Substrate type-Leafy red algae; Substrate-Rhodymenia; Intensity-H; Source-Artificial-Large fish; Hatch-16%; Larvae viable-87%; Dead eggs-549.

Day	Cum %	N			Length		Weight		Yolk		Condition	
		v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	4	4	1	4	6.15	.76	.162	.010	.296	.069	.719	.289
2	4	-	1	-	-	-	-	-	-	-	-	-
3	12	7	1	7	7.56	.44	-	-	.237	.032	-	-
4	30	16	2	15	7.74	.59	-	-	.218	.065	-	-
5	73	39	1	15	8.24	.30	-	-	.166	.026	-	-
6	92	17	1	14	8.19	.57	-	-	.157	.046	-	-
7	97	4	7	4	8.69	.55	-	-	.136	.057	-	-
8	99	2	2	2	8.46	-	-	-	.115	-	-	-
9	100	1	1	1	9.35	-	-	-	.011	-	-	-
All		90	17	62	7.95	-	-	-	.187	-	-	-

Table 52. Beaker B30; Substrate type-Leafy red algae; Substrate-Rhodymenia; Intensity-M; Source-Artificial-Small fish; Hatch-62%; Larvae viable-96%; Dead eggs-164.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	5	12	1	11	7.65	.20	-	-	.216	.027	-	-
2	11	17	1	16	[1]7.55	.22	-	-	.216	.033	-	-
3	24	32	1	21	7.73	.43	-	-	.177	.046	-	-
4	47	60	2	14	8.36	.61	-	-	.147	.039	-	-
5	76	75	-	15	8.20	.38	-	-	.136	.033	-	-
6	91	38	1	15	8.09	.47	-	-	.128	.053	-	-
7	95	11	1	11	8.26	.59	-	-	.131	.048	-	-
8	98	7	1	7	8.56	.64	-	-	.1085	.065	-	-
9	99	3	1	3	8.86	.49	-	-	.058	.052	-	-
10	100-	2	3	2	6.99	-	-	-	-	-	-	-
11	100	1	-	1	7.87	-	-	-	.153	-	-	-
All		258	12	116	8.00	-	-	-	.153	-	-	-

Small numbers to the left of means for length, weight, yolk, and condition indicate numbers sampled in addition to the number under N samp.

Table 53. Beaker B29; Substrate type-Leafy red algae; Substrate-Rhodymenia; Intensity-H; Source-Artificial-Small fish; Hatch-25%; Larvae viable-92%; Dead eggs-400.

	Cum	N			Length		Weight		Yolk		Condition	
Day	%	v.	nv.	samp.	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	σ
1	0	-	1	-	-	-	-	-	-	-	-	-
2	2	2	1	2	7.79	-	-	-	.135	-	-	-
3	5	4	-	4	6.99	.85	-	-	.174	.056	-	-
4	14	11	-	11	7.78	.46	-	-	.194	.055	-	-
5	45	38	1	15	8.20	.57	-	-	.139	.058	-	-
6	70	31	-	15	8.25	.39	-	-	.127	.041	-	-
7	73	3	1	3	6.72	.93	-	-	.203	.045	-	-
8	86	16	2	15	7.84	.53	-	-	.162	.045	-	-
9	98	15	4	14	8.36	.98	-	-	.135	.074	-	-
10	99	1	-	1	7.89	-	-	-	.184	-	-	-
14	100	1	-	-	-	-	-	-	-	-	-	-
All		122	10	80	8.15	-	-	-	.153	-	-	-