

Daftar Pustaka

- Abi-Ayed, A., Kestemont, P., 1994. Comparison of the nutritional status of goldfish (*Carassius auratus*) larvae.
- AIS (Aquaculture Institute of Shanghai). 1982. Culture of Seahorse. pp. 474 ñ 495 in : Fish Biology and Mariculture. Agriculture Publication Press, Beijing.
- Affandi, R., Djadja, S.S., Rahardjo, M.F., Sulistiono. 2005. Fisiologi Ikan Pencernaan dan Penyerapan Makanan. Dept. Manajemen Sumberdaya Perairan. Faperika, IPB.
- Al Qadri, A. H., Sudjiharno, A. Hermawan., 1998. Pemeliharaan Induk dan Pematangan Gonad. Direktorat Jenderal Perikanan. Balai Budidaya Laut. Lampung.
- Al Qodri, A. H., Sudiharjono dan P. Hartono. 1997. Rekayasa Teknologi Pemberian Kuda Laut (*Hippocampus spp*). Ditjen Balai Budidaya Laut Lampung.
- Andini, D., Zainuddin, M. Jalaluddin, Fitriani, U. Balqis, N. Asmilia, dan Hamdan. 2017. Sebaran Sel Goblet pada Usus Lele Lokal (*Clarias batrachus*). Jimvet. 01(3):299-304
- Ahmad, F. Subtitusi Artemia Salina dengan Phromina sp. Terhadap Kualitas Larva Kuda Laut *Hippocampus barbouri*. Tesis. Fakultas Ilmu Kelautan dan Perikanan. Universitas Hasanuddin. Makassar.
- Arifin, J. 2004. Inventarisasi jenis-jenis kuda laut pada daerah lamun di Pulau Lantang Peo Kabupaten Takalar. Jurusan Ilmu Kelautan, Fakultas Ilmu Kelautan dan Perikanan, Universitas Hasanuddin, Makassar.
- Arteaga, J. P., Garcia, R., Carlo, S. dan Valle. 1997. Length-weight Relationship of Cuban Marine Fishes. Journal Ichthyology 2(1): 38- 43.
- Asmanelli dan Andreas, I.P., 1993. Beberapa Catatan Mengenai Kuda Laut dan Kemungkinan Pengembangannya. Oseana, 18(4): 145-151
- Asri, M., Syafiuddin., A. Niartiningsih. 2019. Sintasan dan Pertumbuhan Larva Kuda Laut (*Hippocampus barbouri*) Pada Sistem Air Mengalir Dengan Pergantian Volume Air Yang Berbeda. Jurnal Ilmu Kelautan Vol 5(1): 44-50.
- Bancroft JD dan Gamble M. (2008). Theory and Practice of Histological Techniques: Immunohistochemical Techniques. United State: Churchill Livingstone Elsevier p.433-53.
- Burton, R. and Maurice. 1983. Sea Hourse. Departemen of Ichthyology American Museum of Natural History American.
- Celino, F.T., Hilomen-Garcia, G.V., & del-Norte-Campos, A.G.C. 2012. Feeding Selectivity of The Seahorse, *Hippocampus Kuda* (Bleeker), Juveniles Under Laboratory Conditions. Aquaculture Research. 43, 1804-1815.

- Chen, J., 1990. Seahorse culture. In: Bueno, P., Lovatelli, A. (Eds.), Brief Introduction to Mariculture of Five Selected Species in China. UNDP/FAO Regional seafarming development and demonstration project, Bangkok, Thailand. National Inland Fisheries Institute, Kasetsart University Campus, Bangkhen, Bangkok, Thailand
- Curtis, J.M.R., & Vincent, A.C.J. 2006. Life History of an Unusual Marine Fish: Survival, Growth and Movement Patterns of *Hippocampus guttulatus* Cuvier 1829. *J. Fish Biol.* 68, 707–733.
- Dwiputra, M.A. 2013. Pemeliharaan Larva Kuda Laut (*Hippocampus barbouri*, Jordan & Richardson, 1908) dengan Sistem Resirkulasi. Skripsi. Fakultas Ilmu Kelautan dan Perikanan. Universitas Hasanuddin. Makassar.
- Effendie, M. I. 1997. *Biologi Perikanan*. Yayasan Pustaka Nusantara. Bogor
- Effendi, E. 2003. *Telah Kualitas Air Bagi Pengelolaan Sumber Daya dan Lingkungan Perairan*. Penerbit Kanisius. Yogyakarta.
- Effendi, M. I. 2002. Biologi Perikanan. Yayasan Pustaka Nusantara. Yogyakarta. 157 Hal.
- Erian, V., Zainuddin., Balqis, Ummu. Gambaran Luas Permukaan Vili Usus Ikan Lele Lokal (*Clarias batrachus*) Jantan Dewasa. Fakultas Kedokteran Hewan Universitas Syiah Kuala. 2(3): 283-287.
- Foster S.J. & Vincent, A.C.J. 2004. Life History and Ecology of Seahorses: Implications for Conservation and Management. *Journal of Fish Biology* 65, 1–61.
- Febriana, S. 2007. Studi Anatomofisiologis Alat Pencernaan Kuda Laut (*Hippocampus* Kuda). Tesis. Fakultas Matematika dan Ilmu Pengatahan Indonesia. Universitas Indonesia. Jakarta.
- Garrick-Maidment, N., 1997. *Seahorses: Conservation and Care*. Kingdom Books, England, 48 pp.
- Giwojna, P. 1990. *A Step by Step Book About Seahorses*. T.F.H. Publications, Inc. Amerika Serikat, 64 hal.
- Handajani, H & Widodo, W. 2010. Nutrisi Ikan. UMM Press. Malang. 271 hal.
- Hansen, C. and Cummins, H. 2002. *Seahourse*. Tropical Field Courses- Interdisciplinary Studies- Miami University.
- Herawati, V.E & Johannes. 2015. Analisis Pertumbuhan; Kelulushidupan & Produksi Biomass Larva Udangg Vannamei dengan Pemberian Makanan *Artemia* sp. Produk Lokal Yang Diperkaya *Chaetoceros calcitrans* & *Skeletonema costatum*. *Pena Akuatika Volume 12 No. 1*.
- Hendri, M., Gusti, D., dan Jetun, T. 2010. Konsentrasi Letal (LC50-48 Jam) Logam Tembaga (Cu) dan Logam Kadmium (Cd) Terhadap Tingkat Mortalitas Larva Kuda Laut (*Hippocampus* spp.) Universitas Sriwijaya. Sumatera Selatan.
- Hidayat, A. S. dan Silfester B. Dhoë. 1998. *Biologi Kuda Laut*. Pemberian Kuda Laut (*Hippocampus* spp). Departemen Pertanian. Direktorat Jenderal Perikanan, Balai Budidaya Laut. Lampung.

- Ikpegbu, E., U.C. Nlebedum, and C.S. Ibe. 2014. The histology and mucin histochemistry of the farmed juvenile african catfish digestive tract (*Clarias gariepinus* B). *Studia Universitatis "Vasile Goldis", Seria Stiintele Vietii*. 24(1):125-131.
- Kramer, DL. and MJ. Bryant 1995. Intestine lenght in the fishes of a tropical stream : 1. Ontogenetic allometry, 2. relation to diet the long and short of a convoluted issue. *Environ. Bioi. Fish* 42: 115-141.
- James, P. & Woods, C.M.C. 2001. Rearing Seahorses: Does Temperature Matter Aquac. Update 28, 9–10.
- Lagler, K.F., J.E. Bardach and R.R. Miller 1962. Ichthyology : The study of fishes. John Wiley and Sons. Inc. New York, london : 545 pp.
- Lavens, P and P. Sorgeloos. 1996. Manual on The Production and Use of Live Food for Aquaculture. FAO Fisheries Technical Paper. No. 361. Rome. pp. 295
- Lin, Q., Lu, J.Y., Gao. Y.L., Shen, L., Cai, J., & Luo, J.N. 2006. The Effect of Temperature on Gonad, Embryonic Development and Survival Rate of Juvenile Seahorses, *Hippocampus kuda* Bleeker. *Aquaculture* 254, 701–713.
- Lin, Q., Zhang,D., & Lin, J. 2009. Effects of Light intensity, Stocking Density, Feeding Frequency and Salinity on The Growth of Sub-Adult Seahorses *Hippocampus erectus* Perry, 1810. *Aquaculture* 292, 111–116.
- Lockyear, J. 1998. Studi Pendahuluan Pemijahan di Bak Terkontrol & Pembesaran Kuda Laut KNYSNA (*Hippocampus copensis*). Departement of Ichthyology and Fisheries Science Rhodes University.Graham Stown. South Africa.
- Lourie, S. A., A.C.J. Vincent., and H.J Hall. 1999. Seahorse: An identification guide to the world's species and their conservation, Project Seahorse, London: 214 pp.
- Lourie, S.A., Foster S.J., Cooper, E.W.T., Vincent, A.J.C. 2004. A Guide to the Identification of Seahorses. Project Seahorse and TRAFFIC. University of British Columbia and World Wildlife Fund. North America (US).
- Lourie, S. A. and Kuiter, R. H. 2008. Three New Pygmy Seahourse Species From Indonesian (Teleostoi: Syngnathidae: Hippocampus). *Zootaxa*, 1963: 54- 68.
- Mahathir, A. 2014. Pola Pertumbuhan Kuda Laut (*Hippocampus barbouri*, Jor& & Richardson, 1908) yang Hidup Pada Beberapa Tipe Habitat Di Perairan Kepulauan Tanakeke Kabupaten Takalar. Skripsi. Fakultas Ilmu Kelautan & Perikanan. Universitas Hasanuddin. Makassar.
- Mulyadi, B. 2004. Pengaruh Padat Penebaran Terhadap Sintasan dan Pertumbuhan Larva Kuda Laut (*Hippocampus barbouri*). Skripsi. Fakultas Ilmu Kelautan Perikanan. Universitas Hasanuddin. Makassar.
- Mujastuti. 2002. Memacu Pertumbuhan Ikan Gurami. Penebar Swadaya. Jakarta
- Nontji, A. 2000. Laut Nusantara. Djambatan. Jakarta

- Novelli, B., J.A. Socorro., M.J. Caballero., F. Otero-Ferrer., A. Segade-Botella., L. M. Dominguez. Development of Seahorse (*Hippocampus reidi*, Ginsburg 1933): histological and histochemical study. Fish Physiol Biochem.
- Nurhidayat, K. 2001. Pengaruh Perbedaan Peningkatan Persentase Pergantian Air Terhadap Kelangsungan Hidup dan Pertumbuhan Larva Ikan Kerapu Bebek (*Cromileptes altivelis*) Pada Sistem Air Mengalir. Institut Pertanian Bogor. Bogor.
- Pangkey, H. 2009. Daphnia dan Penggunaannya. Jurnal Perikanan dan Kelautan. Vol (3): 33-36.
- Payne, M. F. 2001. Intensive Cultivation of a Calanoid Copepod For Use As a Live Food In Fish Culture. Department of Environmental Biology, pp. 98. University of Technology Curtin, Curtin, Australia.
- Pennak, R. W. 1953. *Freshwater Invertebrates of United States*. The Ronald Press. New York.
- Petrinec, Z., S. Nedjeli, S. Kuzir, and A. Opacak. 2005. Mucosubstances of the digestive tract mucosa in northern pike (*Exos Lucius L.*) and European catfish (*Silurus glanis L.*). *Veterinarski Arhiv*. 75(4): 317-327.
- Pratiwi, H.C., Manan, A. 2015. Teknik Dasar Histopatologi pada Ikan Gurami (*Oosphronemus gouramy*). Fakultas Perikanan dan Kelautan Universitas Airlangga. Surabaya.
- Purbomartono, C., P. Susatyo, dan Setiawan, A. 2004. Pola Penyebaran Sel Mukus pada Saluran Pencernaan Ikan Tawes. J. Fish. Sci. 4(2):62-65.
- Rahardjo, M.F. 1980. Ichthyologi. Departemen Biologi Perairan. Fakultas Perikanan. Institut Pertanian Bogor. Bogor.
- Rakhman, E. 2012. Pengaruh Urine Kelinci Hamil dalam Media Kultur Terhadap Kontribusi Anak Setiap Kelompok Umur Daphnia Sp. Jurnal Perikanan dan Kelautan. 3(3): 23-40.
- Rizaldy, F . 2013. Efektifitas Nauplii Artemia yang diperkaya dengan Susu Bubuk Afkir sebagai Makanan terhadap Kelangsungan Hidup Larva Nilem (*Osteochilus hasselti*). Skripsi. Program Studi Perikanan, Fakultas Perikanan dan Ilmu Kelautan, Universitas Padjadjaran, Bandung
- Rosa, I.L., Oliveira, T.P., Osório, F.M., Moraes, L.E., Castro, A.L., Barros, G.M & Alves, R.R. 2011. Fisheries and Trade of Seahorses In Brazil: Historical Perspective, Current Trends, and Future Directions. Biod. Cons. 20, 1951-1971.
- Santoso, B. 2014. Analisis Jenis Makanan Kuda Laut *Hippocampus barbouri*, (Jor& & Richardson, 1908) Pada Daerah Padang Lamun di Kepulauan Tanakeke, Takalar, Sulawesi Selatan. Skripsi. Fakultas Ilmu Kelautan & Perikanan. Universitas Hasanuddin.
- Saraswati, S.A. dan Pebriani, D.A.A. 2016. Monitoring Populasi Kuda Laut di Perairan Pantai Padang Bai Monitoring Populasi Kuda Laut di Perairan Pantai Padang Bai Karangasem, Bali.

- Sari, D.K.I., Andriani dan K. Yaqin. 2018. Micromorphological Observation of the Anterior Gut of Sulawesi Medaka Fish (*Oryzias celebensis*). International Journal of Current Microbiology and Applied Sciences 7(2): 2942-2946.
- Setiawan, B. 2009. Pengaruh Padat Penebaran 1, 2 dan 3 Ekor/L Terhadap Kelangsungan Hidup dan Pertumbuhan Benih Ikan Manvis (*Pterophyllum scalare*). Skripsi. Program Studi Teknologi dan Manajemen Akuakultur. Fakultas Perikanan dan Ilmu Kelautan. Institut Pertanian Bogor. Bogor.
- Simon & Schuster. (1997). Simon And Schuster's Complete Guide to Freshwater and Marine Aquarium Fishes. New York. Simon and Schuster, Inc. 337 pp
- Sudaryanto dan A.H. Al Qodri. 1999. Pemeliharaan Larva Kuda Laut (*Hippocampus spp*) di Bak Terkontrol. Buletin Budidaya Laut. Dirjen Perikanan. Balai Budidaya Laut. Lampung
- Syamsuhartien. 2000. Studi Pendahuluan Beberapa Aspek Biologi Reproduksi Kuda Laut (*Hipocampus spp*) di Perairan Kepulauan Tana Keke Kabupaten Takalar. Skripsi. Universitas Hasanuddin. Makassar.
- Teixeira, R.L., & Musick, J. 2001. Reproduction and food habits of the lined seahorse, *Hippocampus erectus* (Teleostei: Syngnathidae) of Chesapeake Bay, Virginia. Braz. J. Biol. 61, 79–90.
- Widianingrum, R. 2000. Respon Pertumbuhan Kuda Laut (*Hippocampus kuda*) Terhadap Lama Pencahyaan. Skripsi. Program Studi Ilmu dan Teknologi Kelautan. Fakultas Perikanan dan Ilmu Kelautan. Institut Pertanian Bogor.
- Wilson, M.J. & Vincent, A.C.J. (1998). Preliminary success in closing the life cycle of exploited seahorse species, *Hippocampus spp.*, in captivity. Aquarium Sciences and Conservation, 2: 179-196.
- Wilson, Z., Carter, C.G., & Purser, G.J. 2005. Nitrogen Budgets For Juvenile Big-Bellied Seahorse *Hippocampus abdominalis* Fed Artemia, Mysids or Pelleted Feeds. Aquaculture Journal 255 (2006) 233–241.
- Woods, C. M. C. 2003. Growth and Survival of Juvenile Seahorse *Hippocampus abdominalis* reared on live, frozen and artificial foods. Aquaculture Research, 34, 757-763.
- Wong, J.M & Benzie, J.A.H.. 2003. The Effects of Temperature, Artemia enrichment, Stocking Density and Light on The Growth of Juvenile Seahorses, *Hippocampus whitei* (Bleeker, 1855), from Australia. Aquaculture 228 107-121.
- Wong, F. 1982. Fish Biology and its Mariculture. Aquaculture Institute of Shanghai. Agriculture Publication Press. Beijing.
- Yusfiati. 2006. Anatomi Alat Pencernaan Ikan Puntal Pisang (*Tetraodon lunaris*). Sekolah Pascasarjana. IPB.
- Yusfiati., E. Roza. 2018. Histopatologi Tunika Mukosa Usus Ikan Baung (*Hemibagrus nemurus* Val) dari Perairan Sungai Siak di daerah Jembatan Siak I Pekanbaru. Fakultas Matematika dan Ilmu Pengetahuan Alam. Universitas Riau.

Zhang, B. 1994. Seahorse (Hippocampus) Culture in China In Aquaculture Technology of Marine Valuable Animals. Translated by Peter Chen. Southern Central China Industry University, pp 162 ñ 174

Zonneveld, N., E.A. Huisman, dan J.H. Boon. 1991. Prinsip-prinsip Budidaya Ikan. PT Gramedia Pustaka Utama, Jakarta.

Zulfahmi, I., Humairani, R. 2018. Kondisi Biometrik dan Histologi Usus Ikan Bandeng (*Chanos chanos* FORSKALL, 1755) yang diberi Makanan Berkomposisi Tepung Bungkil Sawit. Fakultas Sains dan Teknologi. Universitas Islam Negeri Ar-Raniry.

L A M P I R A N

Lampiran 1. Data laju pertumbuhan panjang harian (SGR) larva kuda laut (*Hippocampus barbouri*) selama pemeliharaan pada setiap perlakuan.

Hari/Perlakuan	A			B			C			D		
	L ₀	L _t	SGR	L ₀	L _t	SGR	L ₀	L _t	SGR	L ₀	L _t	SGR
1	1	1	0	1	1	0	1	1	0	1	1	0
	1	1	0	1	1	0	1	1	0	1	1	0
	1	1	0	1	1	0	1	1	0	1	1	0
Rata-rata	1.1	1.1	0	1	1	0	1.1	1	0	1.1	1	0
6	1	1	0	1	1.7	5.36	1	1	-3.34	1	1.3	0
	1	1	6.73	1	1	6.73	1	1	6.73	1	1.4	6.73
	1	1	5.25	1	1	5.25	1	1	5.31	1	1.4	6.73
Rata-rata	1	1.3	3.99	1	1.5	5.78	1	1.1	2.9	1	1.2	4.49
11	1.3	2	4.31	1	2	4.8	1.3	2	2.08	1.3	1.5	1.43
	1	2	6.42	1	2	7.89	1	2	5.31	1	1.4	6.93
	1	2	5.31	1	2	5.88	1	2	5.88	1	1.4	6.93
Rata-rata	1.1	1.9	5.34	1	2.0	6.19	1.1	1.7	4.42	1.1	1.4	5.10
16	1	2	2.87	1	2	1.78	1	2	4.62	1	2.3	3.8
	1	2	4.95	1	2	4.62	1	2	3.92	1	2	4.62
	1	2	5.55	1	2	5.55	1	2	4.62	1	1.8	3.92
Rata-rata	1	2.1	4.46	1	2.0	3.98	1	1.9	4.39	1	2.0	4.11
21	1	2	2.85	1	2	2.15	1	2.6	3.47	1	2.2	2.63
	1	3	4.58	1	2	3.21	1	2	4.16	1	2.2	3.94
	1	3	5.15	1	2	3.47	1	2	4.16	1	2.4	4.38
Rata-rata	1	2.5	4.19	1	1.9	2.94	1	2.4	3.93	1	2.3	3.65
26	1	2	1.92	1	2.3	2.28	1	2.5	2.62	1	2	1.72
	1	3	4.12	1	2	2.77	1	2.5	3.67	1	2.3	3.33
	1	3	4.12	1	2.1	2.97	1	2	3.5	1	2.5	3.67
Rata-rata	1	2.6	3.38	1	2.1	2.67	1	2.5	3.26	1	2.3	2.91
31	1	2	1.90	1	2.3	1.9	1	3	2.67	1	2.7	2.44
	1	2	2.78	1	2.4	2.78	1	3	3.05	1	2.5	3.05
	1	3	3.05	1	2.5	3.05	1	3	3.31	1	3	3.66
Rata-rata	1	2.4	2.58	1	2.4	2.58	1	2.7	3.01	1	2.7	3.05

Lampiran 2. Analisis sidik ragam (ANOVA) laju pertumbuhan panjang harian (SGR) larva kuda laut (*Hippocampus barbouri*) selama pemeliharaan pada setiap perlakuan.

ANOVA (SGR Hari-1)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.000	3	.000	.	.
Within Groups	.000	8	.000		
Total	.000	11			

ANOVA (SGR Hari-6)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.837	3	4.279	.295	.828
Within Groups	115.985	8	14.498		
Total	128.822	11			

ANOVA (SGR Hari-11)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.797	3	1.599	.358	.785
Within Groups	35.712	8	4.464		
Total	40.509	11			

ANOVA (SGR Hari-16)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.797	3	1.599	.358	.785
Within Groups	35.712	8	4.464		
Total	40.509	11			

ANOVA (SGR Hari-21)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.609	3	.870	1.195	.372
Within Groups	5.822	8	.728		
Total	8.431	11			

ANOVA (SGR Hari-26)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.963	3	.321	.409	.751
Within Groups	6.284	8	.786		
Total	7.247	11			

ANOVA (SGR Hari-31)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.619	3	.206	.688	.584
Within Groups	2.398	8	.300		
Total	3.017	11			

Lampiran 3. Data laju pertumbuhan bobot harian (SGR) larva kuda laut (*Hippocampus barbouri*) selama pemeliharaan pada setiap perlakuan.

Hari/Perlakuan	A			B			C			D		
	W ₀	W _t	SGR									
1	0.007	0.007	0	0.007	0.007	0	0.007	0.007	0	0.007	0.007	0
	0.009	0.009	0	0.009	0.009	0	0.009	0.009	0	0.009	0.009	0
	0.0098	0.0098	0	0.0098	0.0098	0	0.0098	0.0098	0	0.0098	0.0098	0
Rata-rata	0.0086	0.0086	0									
6	0.007	0.0101	7.33	0.007	0.01	7.13	0.007	0.0074	1.11	0.007	0.0073	0.84
	0.009	0.0087	-3.39	0.009	0.0111	4.19	0.009	0.0099	1.90	0.009	0.0121	5.92
	0.0098	0.0092	-1.26	0.0098	0.0122	4.38	0.0098	0.0119	3.88	0.0098	0.0097	-0.2
Rata-rata	0.0086	0.0093	0.89	0.0086	0.0097	5.23	0.0086	0.0078	2.29	0.0086	0.0097	2.19
11	0.007	0.0262	13.20	0.007	0.0227	11.76	0.007	0.0167	8.7	0.007	0.0114	4.87
	0.009	0.0265	10.80	0.009	0.024	9.81	0.009	0.0191	7.52	0.009	0.0295	11.87
	0.0098	0.0168	5.39	0.0098	0.0208	7.53	0.0098	0.0225	8.31	0.0098	0.0125	2.43
Rata-rata	0.0086	0.0232	9.80	0.0086	0.0225	9.7	0.0086	0.0194	8.18	0.0086	0.0178	6.39
16	0.007	0.0364	10.99	0.007	0.0197	6.9	0.007	0.048	12.83	0.007	0.039	11.45
	0.009	0.0353	9.11	0.009	0.0296	7.94	0.009	0.0245	6.68	0.009	0.023	6.25
	0.0098	0.0337	8.23	0.0098	0.0349	8.47	0.0098	0.025	6.24	0.0098	0.02	4.76
Rata-rata	0.0086	0.0351	9.45	0.0086	0.03	7.77	0.0086	0.0325	8.58	0.0086	0.0273	7.49
21	0.007	0.0442	9.21	0.007	0.0208	5.45	0.007	0.0533	10.15	0.007	0.0481	9.64
	0.009	0.0426	7.77	0.009	0.0291	5.87	0.009	0.0407	7.55	0.009	0.0341	6.66
	0.0098	0.0672	9.63	0.0098	0.0366	6.59	0.0098	0.0369	6.63	0.0098	0.0369	6.63
Rata-rata	0.0086	0.0513	8.87	0.0086	0.0288	5.97	0.0086	0.0436	8.11	0.0086	0.0397	7.64
26	0.007	0.0345	6.38	0.007	0.0374	6.7	0.007	0.0502	7.88	0.007	0.0303	5.86

	0.009	0.0754	8.50	0.009	0.0392	5.89	0.009	0.0548	7.23	0.009	0.0593	7.54
	0.0098	0.086	8.69	0.0098	0.0454	6.13	0.0098	0.0467	6.25	0.0098	0.0467	6.25
Rata-rata	0.0086	0.0653	7.86	0.0086	0.0407	6.24	0.0086	0.0506	7.12	0.0086	0.0454	6.55
	0.007	0.0632	7.33	0.007	0.0433	6.07	0.007	0.0775	8.01	0.007	0.0802	8.13
31	0.009	0.0445	5.33	0.009	0.0431	5.22	0.009	0.0639	6.53	0.009	0.0776	7.18
	0.0098	0.0549	5.75	0.0098	0.0674	6.43	0.0098	0.0623	6.16	0.0098	0.0623	6.17
Rata-rata	0.0086	0.0542	6.13	0.0086	0.0513	5.91	0.0086	0.0679	6.9	0.0086	0.0734	7.16

Lampiran 4. Analisis sidik ragam (ANOVA) laju pertumbuhan bobot harian (SGR) larva kuda laut (*Hippocampus barbouri*) selama pemeliharaan pada setiap perlakuan.

ANOVA (SGR Hari-1)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.000	3	.000	.	.
Within Groups	.000	8	.000		
Total	.000	11			

ANOVA (SGR Hari-6)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	22.598	3	7.533	.782	.536
Within Groups	77.029	8	9.629		
Total	99.627	11			

ANOVA (SGR Hari-11)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	23.031	3	7.677	.685	.586
Within Groups	89.718	8	11.215		
Total	112.749	11			

ANOVA (SGR Hari-16)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.984	3	2.328	.326	.807
Within Groups	57.071	8	7.134		
Total	64.056	11			

ANOVA (SGR Hari-21)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13.567	3	4.522	2.378	.146
Within Groups	15.214	8	1.902		
Total	28.781	11			

ANOVA (SGR Hari-26)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.544	3	1.515	1.856	.215
Within Groups	6.528	8	.816		
Total	11.072	11			

ANOVA (SGR Hari-31)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.231	3	1.077	1.261	.351
Within Groups	6.834	8	.854		
Total	10.065	11			

Lampiran 5. Data panjang mutlak larva kuda laut (*Hippocampus barbouri*) selama pemeliharaan pada setiap perlakuan.

Perlakuan	L0	Lt	Pm (Lt-L0)
A	1.3	2.3	1.0
	1.0	2.3	1.3
	1.0	2.5	1.5
Rata-rata	1.1	2.4	1.3
B	1.3	2.3	1.0
	1.0	2.4	1.4

	1.0	2.5	1.5
Rata-rata	1.1	2.4	1.3
	1.3	2.9	1.6
C	1.0	2.5	1.5
	1.0	2.7	1.7
Rata-rata	1.1	2.7	1.6
	1.3	2.7	1.4
D	1.0	2.5	1.5
	1.0	3.0	2.0
Rata-rata	1.1	2.7	1.6

Lampiran 6. Analisis sidik ragam (ANOVA) panjang mutlak larva kuda laut (*Hippocampus barbouri*) selama pemeliharaan pada setiap perlakuan.

ANOVA					
Ulangan	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.337	3	.112	1.820	.222
Within Groups	.493	8	.062		
Total	.830	11			

Lampiran 7. Data bobot mutlak larva kuda laut (*Hippocampus barbouri*) selama pemeliharaan pada setiap perlakuan.

Perlakuan	W0	Wt	Bm (Wt-W0)
A	0.0070	0.0631	0.0561
	0.0090	0.0445	0.0355
	0.0098	0.0549	0.0451
Rata-rata	0.0086	0.0542	0.0456
B	0.0070	0.0433	0.0363
	0.0090	0.0431	0.0341
	0.0098	0.0674	0.0576
Rata-rata	0.0086	0.0513	0.0427
C	0.0070	0.0775	0.0705
	0.0090	0.0639	0.0549
	0.0098	0.0623	0.0525
Rata-rata	0.0086	0.0679	0.0593
D	0.0070	0.0802	0.0732
	0.0090	0.0776	0.0686
	0.0098	0.0693	0.0595
Rata-rata	0.0086	0.0734	0.0671

Lampiran 8. Analisis sidik ragam (ANOVA) bobot mutlak larva kuda laut (*Hippocampus barbouri*) selama pemeliharaan pada setiap perlakuan.

ANOVA

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.001	3	.000	3.809	.058
Within Groups	.001	8	.000		
Total	.002	11			

Lampiran 9. Sintasan larva kuda laut (*Hippocampus barbouri*) selama pemeliharaan pada setiap perlakuan.

Hari/Perlakuan	A	B	C	D
	Survival Rate (%)	Survival Rate (%)	Survival Rate (%)	Survival Rate (%)
1	100	95	100	100
	100	100	100	95
	100	100	100	95
Rata-rata	100	98.3	100	96.7
6	100	55	80	75
	100	70	95	60
	100	70	65	55
Rata-rata	100	65	80	63.3
11	90	30	55	75
	90	45	75	55
	85	40	30	55
Rata-rata	88.3	38.3	53.3	61.7
16	80	30	35	75
	85	35	65	45
	70	40	25	45
Rata-rata	78.3	35	41.7	55
21	80	25	30	55
	80	35	60	40
	55	40	25	45
Rata-rata	71.7	33.3	38.3	46.7
26	60	25	25	50
	70	35	60	40
	45	40	25	45
Rata-rata	58.3	33.3	36.7	45
31	40	25	25	50
	55	35	60	40

	45	40	25	45
Rata-rata	46.7	33.3	36.7	45

Lampiran 10. Analisis sidik ragam (ANOVA) sintasan larva kuda laut (*Hippocampus barbouri*) yang dipelihara pada setiap perlakuan.

ANOVA (SGR Hari-1)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	22.917	3	7.639	1.833	.219
Within Groups	33.333	8	4.167		
Total	56.250	11			

ANOVA (SGR Hari-6)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2606.250	3	868.750	8.510	.007
Within Groups	816.667	8	102.083		
Total	3422.917	11			

ANOVA (SGR Hari-11)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3956.250	3	1318.750	7.447	.011
Within Groups	1416.667	8	177.083		
Total	5372.917	11			

ANOVA (SGR Hari-16)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3291.667	3	1097.222	5.374	.026
Within Groups	1633.333	8	204.167		
Total	4925.000	11			

ANOVA (SGR Hari-21)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2608.333	3	869.444	5.089	.029
Within Groups	1366.667	8	170.833		
Total	3975.000	11			

ANOVA (SGR Hari-26)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1116.667	3	372.222	2.291	.155
Within Groups	1300.000	8	162.500		
Total	2416.667	11			

ANOVA (SGR Hari-31)

Ulangan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	372.917	3	124.306	.904	.481
Within Groups	1100.000	8	137.500		
Total	1472.917	11			

Lampiran 11. Uji lanjut w-tuckey sintasan harian (SR) larva kuda laut (*Hippocampus barbouri*) selama pemeliharaan pada setiap perlakuan.

Tuckey (SR Hari-6)

Multiple Comparisons

Dependent Variable: Ulangan

Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A	B	35.00000*	8.24958	.012	8.5819	61.4181
	C	20.00000	8.24958	.149	-6.4181	46.4181
	D	36.66667*	8.24958	.009	10.2486	63.0847
B	A	-35.00000*	8.24958	.012	-61.4181	-8.5819
	C	-15.00000	8.24958	.332	-41.4181	11.4181
	D	1.66667	8.24958	.997	-24.7514	28.0847

C	A	-20.00000	8.24958	.149	-46.4181	6.4181
	B	15.00000	8.24958	.332	-11.4181	41.4181
	D	16.66667	8.24958	.257	-9.7514	43.0847
D	A	-36.66667*	8.24958	.009	-63.0847	-10.2486
	B	-1.66667	8.24958	.997	-28.0847	24.7514
	C	-16.66667	8.24958	.257	-43.0847	9.7514

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

Tukey (SR Hari-11) Multiple Comparisons

Dependent Variable: Ulangan

Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A	B	50.00000*	10.86534	.008	15.2054	84.7946
	C	35.00000*	10.86534	.049	.2054	69.7946
	D	26.66667	10.86534	.143	-8.1280	61.4613
B	A	-50.00000*	10.86534	.008	-84.7946	-15.2054
	C	-15.00000	10.86534	.543	-49.7946	19.7946
	D	-23.33333	10.86534	.218	-58.1280	11.4613
C	A	-35.00000*	10.86534	.049	-69.7946	-.2054
	B	15.00000	10.86534	.543	-19.7946	49.7946
	D	-8.33333	10.86534	.867	-43.1280	26.4613
D	A	-26.66667	10.86534	.143	-61.4613	8.1280
	B	23.33333	10.86534	.218	-11.4613	58.1280
	C	8.33333	10.86534	.867	-26.4613	43.1280

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

Tuckey (SR Hari-16)

Multiple Comparisons

Dependent Variable: Ulangan

Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A	B	43.33333*	11.66667	.025	5.9726	80.6941
	C	36.66667	11.66667	.054	-.6941	74.0274
	D	23.33333	11.66667	.264	-14.0274	60.6941
B	A	-43.33333*	11.66667	.025	-80.6941	-5.9726
	C	-6.66667	11.66667	.938	-44.0274	30.6941
	D	-20.00000	11.66667	.377	-57.3608	17.3608
C	A	-36.66667	11.66667	.054	-74.0274	.6941
	B	6.66667	11.66667	.938	-30.6941	44.0274
	D	-13.33333	11.66667	.676	-50.6941	24.0274
D	A	-23.33333	11.66667	.264	-60.6941	14.0274
	B	20.00000	11.66667	.377	-17.3608	57.3608
	C	13.33333	11.66667	.676	-24.0274	50.6941

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

Tuckey (SR Hari-21)
Multiple Comparisons

Dependent Variable: Ulangan

Tukey HSD

(I) Perlakuan	(J) Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A	B	38.33333*	10.67187	.029	4.1582	72.5084
	C	33.33333	10.67187	.056	-.8418	67.5084
	D	25.00000	10.67187	.167	-9.1751	59.1751
B	A	-38.33333*	10.67187	.029	-72.5084	-4.1582
	C	-5.00000	10.67187	.964	-39.1751	29.1751
	D	-13.33333	10.67187	.616	-47.5084	20.8418
C	A	-33.33333	10.67187	.056	-67.5084	.8418
	B	5.00000	10.67187	.964	-29.1751	39.1751
	D	-8.33333	10.67187	.861	-42.5084	25.8418
D	A	-25.00000	10.67187	.167	-59.1751	9.1751
	B	13.33333	10.67187	.616	-20.8418	47.5084
	C	8.33333	10.67187	.861	-25.8418	42.5084

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