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LAMPIRAN

Lampiran 1. Data Curah Hujan Kota Makassar Tahun 2019

Bulan	Jumlah Curah Hujan (mm)	Jumlah Hari Hujan (Hari)	Penyinaran Matahari (%)
Januari	642	28	36
Februari	239	24	62
Maret	**445**	**22**	**57**
April	354	22	67
Mei	60	5	81
Juni	61	13	62
Juli	2	4	88
Agustus	**0**	**2**	**97**
September	-	-	97
Oktober	-	-	98
November	78	8	90
Desember	281	23	69

Sumber: Balai Besar Meteorologi Klimatologi dan Geofisika Wilayah IV Makassar

Lampiran 2. Koordinat dan Keadaan Umum Titik Pengambilan Sampel

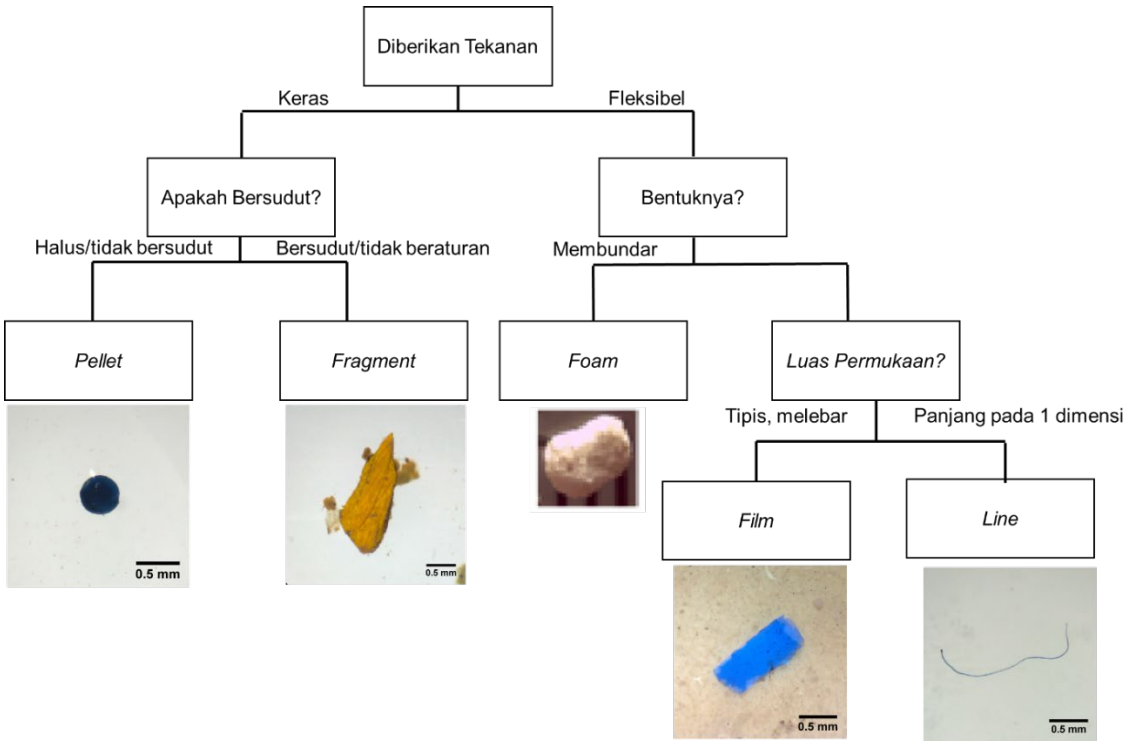
Stasiun	Koordinat	Kondisi sempadan sungai
T-1	-5.1428029, 119.4846912	Bakau, didominasi *Nypa fruticans*
T-2	-5.1415835, 119.4772392	Bakau, didominasi *Nypa fruticans*. Bersebelahan dengan keramba jaring apung
T-3	-5.1234475, 119.4799398	Bakau, didominasi *Nypa fruticans*. Bersebelahan dengan dermaga penyebrangan dan lokasi pemukiman kera-kera
T-4	-5.1192363, 119.4675322	Bakau, didominasi *Nypa fruticans*. Bersebelahan dengan Dermaga dan pemukiman Lakkang
T-5	-5.1142075, 119.4466198	Bakau, didominasi *Nypa fructicans* dan *Rhizophora sp*. Mendapat aliran air langsung dari kanal pampang
T-6	-5.1026818, 119.4497193	Bakau pada sempadan utara dan konstruksi semen pada sempadan di selatan. Bersebelahan dengan pemukiman nelayan dan pabrik, berlokasi di muara sungai Tallo
J-1	-5.2276382, 119.4897522	Vegetasi natural, bersebelahan dengan area persawahan
J-2	-5.2073008, 119.4473039	Tanggul pasir, dekat dengan lokasi berkumpulnya eceng gondok. Dekat dengan lingkungan pemukiman Sungguminasa
J-3	-5.1919415, 119.4401131	Tanggul pasir, dekat dengan dermaga penyebrangan perahu kayu. Ramai aktivitas penyebrangan sungai dengan perahu kayu
J-4	-5.1934893, 119.4231758	Tanggul pasir, bersebelahan dengan tempat pembuangan sampah sementara di Kab. Gowa
J-5	-5.1941977, 119.4102654	Tanggul Semen. Dekat dengan Bendungan Karet. Bersebelahan dengan persawahan
J-6	-5.1919596, 119.3834117	Tanggul semen dan bebatuan, berada di muara sungai Jeneberang.

Lampiran 3. Kriteria Identifikasi Mikroplastik

Pengamatan mikroplastik dilakukan oleh pengamat mikroplastik yang sudah terlatih dengan pengalaman pengamatan MP setidaknya 2 tahun. Kemampuan dari pengamat MP sangat mempengaruhi ketepatan dalam proses pengamatan visual MP (Isobe et al. 2019). Ciri-ciri suatu partikel termasuk ke dalam MP dicirikan oleh ciri-ciri sebagai berikut:

1. Berukuran kurang dari 5 mm
2. Tidak memiliki inti sel, dinding sel, segmen teratur dan cabang yang merupakan penciri makhluk hidup.
3. Memantulkan cahaya
4. Memiliki warna yang cenderung homogen dan jelas, kontras dengan partikel alam yang didominasi warna kecoklat-an.
5. Memiliki tekstur fleksibel, plastis yang kuat.

Penggolongan bentuk mikroplastik didasarkan pada bagan berikut:



Lampiran 4. Data MP di Lingkungan Sungai Tallo dan Jeneberang

Mikroplastik di Sungai Tallo pada musim hujan

Kompartemen	Stasiun	Jarak Tarik (m)	ulangan	#MP pada filter	Kelimpahan MP	Kelimpahan MP rata-rata
Air (MP/m^3)	T-1	100	1	5	1,11	1,33
			2	5	1,11	
			3	8	1,78	
	T-2	100	1	4	0,89	0,74
			2	1	0,22	
			3	5	1,11	
	T-3	100	1	11	2,44	1,33
			2	5	1,11	
			3	2	0,44	
	T-4	100	1	13	2,89	2,15
			2	9	2,00	
			3	7	1,56	
	T-5	100	1	9	2,00	1,26
			2	4	0,89	
			3	4	0,89	
	T-6	100	1	4	0,89	1,93
			2	12	2,67	
			3	10	2,22	
Sedimen (MP/kg)	T-1		1	3	30,00	43,33
			2	5	50,00	
			3	5	50,00	
	T-2		1	4	40	30,00
			2	2	20	
			3	3	30	
	T-3		1	1	10,00	16,67
			2	4	40,00	
			3	0	0,00	
	T-4		1	7	70,00	40,00
			2	2	20,00	
			3	3	30,00	
	T-5		1	5	50,00	33,33
			2	2	20,00	
			3	3	30,00	
	T-6		1	12	120,00	73,33
			2	5	50,00	
			3	5	50,00	

Mikroplastik di Sungai Tallo pada Musim Kemarau

Kompartemen	Stasiun	Jarak Tarik (m)	ulangan	#MP pada filter	Kelimpahan MP	Kelimpahan MP rata-rata
Air (MP/m^3)	T-1	100	1	15	3,33	1,92
			2	5	1,11	
			3	6	1,33	
	T-2	100	1	8	1,78	1,55
			2	6	1,33	
			3	7	1,55	
	T-3	100	1	8	1,78	2,07
			2	11	2,44	
			3	9	2,00	
	T-4	100	1	9	2,00	2,00
			2	10	2,22	
			3	8	1,78	
	T-5	100	1	16	3,56	2,67
			2	9	2,00	
			3	11	2,44	
	T-6	100	1	15	3,33	3,41
			2	16	3,56	
			3	15	3,33	
Sedimen (MP/kg)	T-1		1	6	60,00	33,33
			2	3	30,00	
			3	1	10,00	
	T-2		1	7	70,00	83,33
			2	6	60,00	
			3	12	120,00	
	T-3		1	4	40,00	50,00
			2	8	80,00	
			3	3	30,00	
	T-4		1	5	50,00	40,00
			2	3	30,00	
			3	4	40,00	
	T-5		1	9	90,00	100
			2	7	70,00	
			3	14	140,00	
	T-6		1	12	120,00	150
			2	19	190,00	
			3	14	140,00	

Mikroplastik di Sungai Jeneberang pada Musim Hujan

Kompartemen	Stasiun	Jarak Tarik (m)	ulangan	#MP pada filter	Kelimpahan MP	Kelimpahan MP rata-rata
Air (MP/m^3)	J-1	100	1	12	2,67	3,04
			2	9	2,00	
			3	20	4,44	
	J-2	160	1	15	2,08	2,64
			2	26	3,61	
			3	16	2,22	
	J-3	150	1	17	2,52	2,42
			2	18	2,67	
			3	14	2,07	
	J-4	180	1	20	2,47	1,69
			2	14	1,73	
			3	7	0,86	
	J-5	230	1	16	1,55	1,55
			2	14	1,35	
			3	18	1,74	
	J-6	230	1	22	2,13	1,58
			2	14	1,35	
			3	13	1,26	
Sedimen (MP/kg)	J-1		1	5	50,00	50,00
			2	6	60,00	
			3	4	40,00	
	J-2		1	7	70,00	40,00
			2	2	20,00	
			3	3	30,00	
	J-3		1	2	20,00	30,00
			2	5	50,00	
			3	2	20,00	
	J-4		1	4	40,00	36,67
			2	5	50,00	
			3	2	20,00	
	J-5		1	2	20,00	20,00
			2	3	30,00	
			3	1	10,00	
	J-6		1	2	20,00	16,67
			2	1	10,00	
			3	2	20,00	

Mikroplastik di Sungai Jeneberang pada musim kemarau

Kompartemen	Stasiun	Jarak Tarik (m)	ulangan	#MP pada filter	Kelimpahan MP	Kelimpahan MP rata-rata
Air (MP/m^3)	J-1	100	1	25	5,56	3,34
			2	13	2,89	
			3	7	1,56	
	J-2	160	1	15	2,08	1,57
			2	13	1,81	
			3	6	0,83	
	J-3	150	1	15	2,22	2,22
			2	16	2,37	
			3	13	1,93	
	J-4	180	1	13	1,60	1,52
			2	10	1,23	
			3	14	1,73	
	J-5	230	1	13	1,44	0,89
			2	5	0,56	
			3	6	0,67	
	J-6	230	1	8	0,77	0,64
			2	7	0,68	
			3	5	0,48	
Sedimen (MP/kg)	J-1		1	6	60,00	63,33
			2	8	80,00	
			3	5	50,00	
	J-2		1	6	60,00	66,67
			2	6	60,00	
			3	8	80,00	
	J-3		1	6	60,00	70,00
			2	6	60,00	
			3	9	90,00	
	J-4		1	2	20,00	36,67
			2	4	40,00	
			3	5	50,00	
	J-5		1	6	60,00	36,67
			2	2	20,00	
			3	3	30,00	
	J-6		1	4	40,00	43,33
			2	5	50,00	
			3	4	40,00	

Lampiran 5. Kebiasaan Makan Ikan

Spesies	Makanan utama[a]	Hasil pengamatan pada sampel	Kecenderungan kebiasaan makan
M. cyprinoides	Ikan dan krustasea	Tulang belakang ikan, otolith, sisik	Karnivor
O. niloticus	Fitoplankton, algae dan detritus	Potongan daun, potongan akar, tumbuhan vaskular	Herbivor
M. cephalus	Detritus, mikroalga dan bentos	Mikroalga dan potongan alga	Herbivor
O. mossambicus	Alga dan fitoplankton	Potongan daun, lumut dan tumbuhan vaskular	Herbivor
B. gonionotus	Berbagai tumbuhan	Daun dan akar	Herbivor
T. trichopterus	Zooplankton, krustasea, larva serangga	Potongan zooplankton	Karnivor
O. marmorata	ikan	Tulang belakang ikan, otolith, sisik	Karnivor
G. aureus	Serangga, udang dan ikan kecil	Zooplankton, otolith, tulang belakang ikan	Karnivor

[a]berdasarkan fishbase.se (diakses pada tanggal 07 Februari 2020)

Lampiran 6. Bobot, Ukuran dan Jumlah MP pada Sampel Ikan

Ikan yang ditangkap dari Sungai Tallo

no	Spesies	Nama Lokal	Bobot (g)	TL (cm)	Jumlah MP
1	*Oreochromis mossambicus*	Mujair	91,1	16,4	4
2			64,4	15,5	0
3			68,8	15,6	0
4			73,5	16	1
5			49,7	13,5	2
6			53,5	14	3
7			39,9	11,3	0
8			42,3	12	0
9			86,2	16	3
10			52,8	13,5	1
11			43,4	12,5	0
12			46,1	13,2	2
13			41,4	12,5	3
14			49,8	13,3	4
15			42,9	12,5	5
16			35,8	11,6	2
17			30,4	12	1
18			27,6	11,4	0
19			26,9	11,4	1
20			28,4	11,5	0
21			40,9	13,2	2
22			26,5	12,5	2
23			32,7	12,2	1
24			32,5	12,6	0
25			32,7	12	1
26			28,1	11,7	1
27	*Oreochromis niloticus*	Nila	52,9	14,8	2
28			41,8	13,4	0
29			69,4	15,1	3
30			44,5	13,2	1
31			50,2	14	0
32			43,1	14,3	1
33			46,4	13,4	2
34			18,1	10,5	0
35			30,6	12,2	1
36			205	21,3	6
37			211	21	8
38			156	20,3	4
39			227	22	7
40			208	21,4	8
41			252	22,5	1
42			218	21,2	3
43			241	21,3	0
44			216	22	2
45			121	19	0
46			157	19,9	1

47			166	19,5	2
48			305	23,9	1
49			214	21,8	1
50			276	22,9	1
51			256	22,2	0
52			235	21,9	0
53			255	21,9	0
54			277	23,5	0
55			138	19	1
56			258	21,7	1
57			182	20,2	4
58	*Barbonymus gonionotus*	Tawes	160,9	22,5	0
59			160,1	21,7	0
60			75,6	17,2	0
61			86,2	18,5	1
62			54,3	16,5	0
63			53,9	16,2	0
64			120,4	20,6	2
65			69	17,9	0
66			64,6	16,8	1
67			70	16,4	1
68			68,3	16,6	2
69			57,4	16,5	2
70			61,6	16,7	0
71			57,6	15,9	2
72			35,4	17,3	1
73			72,8	16,5	0
74			84,5	18	0
75			67,1	16,9	3
76			71,8	17	4
77			67,8	16,1	0
78			73,2	17,3	2
79			67,8	16,1	0
80			51,2	16,2	0
81			40	16,1	1
82			35	15,8	8
83			38	15,9	2
84			47	16,2	2
85			37	15,5	2
86			95	19,2	0
87			75	17,5	1
88			57	17,9	0
89			40	15,8	2
90			35	14,1	2
91			52	16,4	0
92	*Megalops cyprinoides*	Bulan-bulan	156,8	26,5	3
93			164,1	26,9	5
94			113,4	26,5	1
95			177,9	23,7	8
96			182,3	26,9	0

97			115,1	23,2	0
98			141,6	24,6	2
99			222,4	29,7	0
100			180,9	27,6	1
101			96,3	22,1	1
102			133,6	25,2	0
103			168,9	26,2	1
104			244,9	30,6	5
105			149,3	27	2
106	*Trichopodus trichopterus*	Sepat rawa	10,9	9	6
107			8,4	8,4	1
108			11,5	9,1	0
109			6,4	7,8	2
110			7,4	7,9	0
111			12	9,5	0
112			10,3	8,9	2
113			10	9	0
114			6,5	7,7	1
115			12,3	9,4	0
116			10	8,5	2
117			11,2	8,9	0
118			11,2	9,2	0
119			8,9	8,4	0
120			6,9	8,4	0
121			12	10,1	1
122			7,2	8,4	0
123			9,5	8,7	0
124			9,3	8,9	2
125			11,5	9,4	0
126			7,3	8,5	0
127			8,7	8,5	0
128			10,7	9,1	0
129			10,7	9	0
130			9,7	8,9	0
131	*Mugil cephalus*	Belanak	30,1	16,7	4
132			20,1	13,1	2
133			17,9	12	1
134			26,7	14,5	1
135			12,9	11,6	5
136			19,4	12,5	1
137			14,4	11,4	1
138			18,5	12,3	0
139			17,2	11,3	0
140			17,2	12,1	1

Ikan yang ditangkap dari Sungai Jeneberang

no	Spesies	Nama Lokal	Bobot (g)	Panjang (cm)	#MP
1		Tawes	190,8	22,8	0

2	*Barbonymus gonionotus*		102,9	20,5	3
3			312,9	27,9	1
4			191,7	23,4	4
5			182	23	0
6			157	21	0
7			72	17	2
8			134	20	0
9			117,6	20,4	7
10			46,7	12,3	1
11			99,9	17,5	2
12			149,2	17,5	4
13			136,5	21,7	2
14			215,5	25	9
15	*Oxyeleotris marmorata*	Betutu	208,8	24,5	3
16			252,9	26,3	2
17			137,3	22,3	1
18			162,8	22,8	1
19			109,4	20,3	3
20			70,5	18,1	2
21			121,6	21,7	4
22			136,7	22,5	0
23			120,8	21	1
24			137,6	21,8	0
25			116	19,1	1
26			50,6	15,9	0
27			106	19,4	5
28			95,4	20,3	1
29			74,2	18,2	1
30			90,8	19,1	0
31			170,4	27,9	0
32			124,2	21,4	1
33			80,1	18,9	0
34			85,1	19	0
35			119,2	21,1	0
36			134,4	21,6	0
37			60,2	17,4	1
38			169,9	23,1	1
39			101,1	19,3	1
40			83,2	18,4	0
41			237,2	25,9	1
42			166	23	0
43			95,3	19,5	1
44			114,7	20,1	0
45			258,4	27,3	0
46			147,3	23,1	0
47			242,7	26,1	0
48			79	19	4
49			145	22,9	4
50			310,2	27,5	1
51			120,9	21,3	0

52			146,5	22,6	1
53			112,8	20,6	0
54			106,6	21	1
55			134,8	22,7	2
56			108,6	20,5	2
57			107,2	21	1
58			102,4	20,5	1
59			74,4	19	2
60	*Glossogobius aureus*	Beloso	52,4	20,5	2
61			26,2	15,2	0
62			30,8	16,5	1
63			26,1	15,3	0
64			44,6	18,5	1
65			22,9	14,9	0
66			12,8	12,7	0

Lampiran 7. Score Value Kerusakan Histologi pada Organ Usus dan Hati

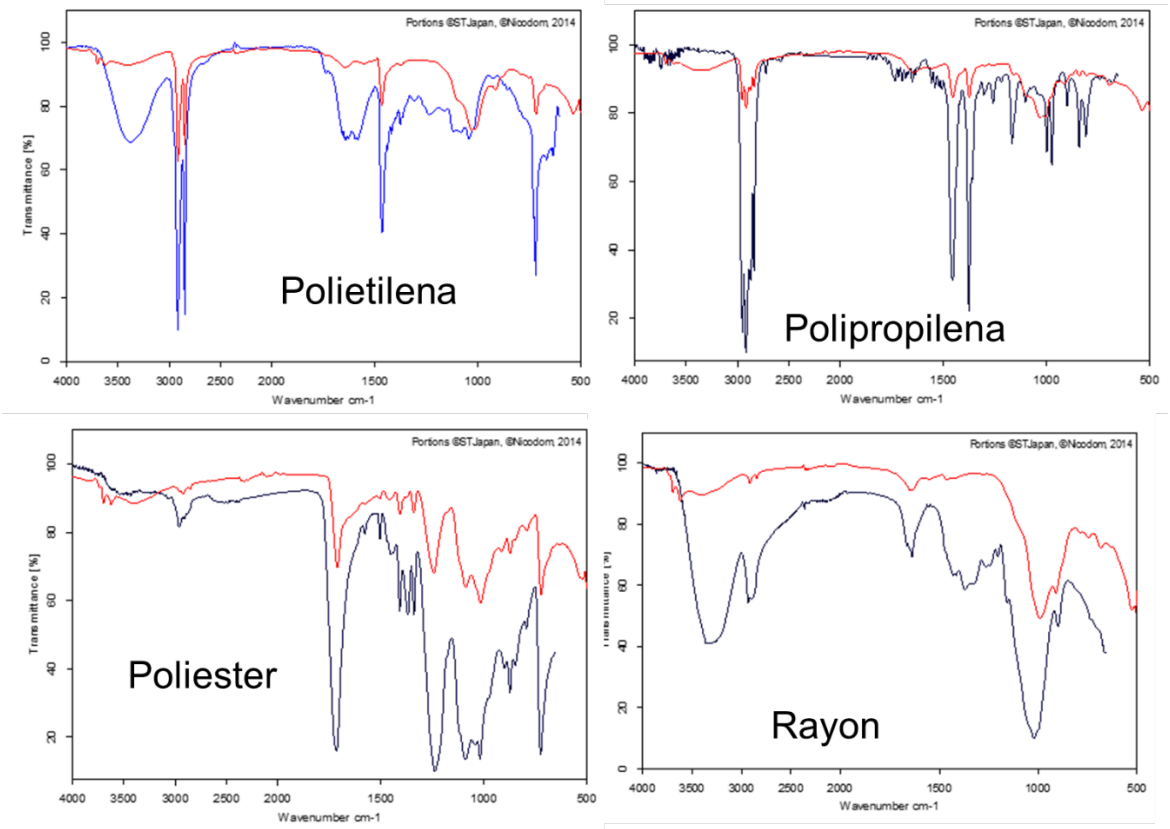
Organ usus, angka dalam kurung pada setiap kerusakan menunjukkan nilai *important factor*

Perlakuan	ulangan	Score value		
		Hemoragi (1)	Nekrosis (3)	Infiltrasi sel radang (2)
Kontrol	1	0	0	0
	2	0	0	0
	3	0	0	0
	4	0	0	0
	5	0	0	0
PMP	1	2	2	2
	2	2	2	2
	3	2	2	2
	4	2	2	2
	5	2	4	2
PMP+	1	2	4	2
	2	2	2	4
	3	2	2	2
	4	2	4	4
	5	2	4	4

Organ hati, angka dalam kurung pada setiap kerusakan menunjukkan nilai important factor

perlakuan	ulangan	Score value		
		Hemoragi (1)	Nekrosis (3)	MMC (2)
Kontrol	1	0	0	0
	2	0	0	0
	3	0	0	0
	4	0	0	0
	5	0	0	0
PMP	1	2	0	0
	2	4	0	0
	3	4	0	0
	4	4	0	0
	5	6	0	0
PMP+	1	4	2	2
	2	4	2	2
	3	4	4	2
	4	6	4	4
	5	6	4	4

Lampiran 8. Contoh Spektra Polimer yang Ditemukan pada Sampel



Lampiran 9. Dokumentasi Kegiatan

Sempadan Sungai Tallo

Sempadan Sungai Jeneberang

Bendungan Karet di Sungai jeneberang

Bendungan Sungguminasa
di Sungai jeneberang

Penarikan Neuston Net

Eceng gondok di lokasi sungai

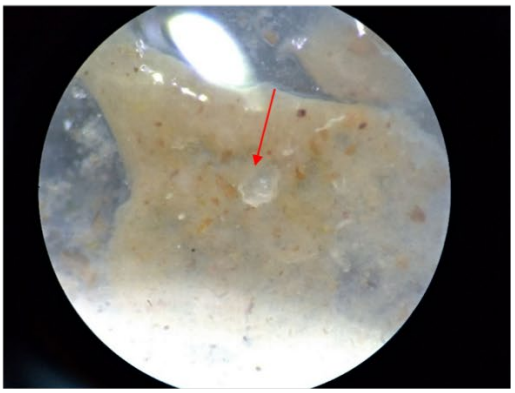
Proses penyaringan sampel

Perlengkapan pengamatan MP

Packing ikan nila
untuk kebutuhan eksperimen

Pengambilan darah ikan

Ikan nila yang digunakan untuk eksperimen



Keberadaan MP pada feses ikan

Lampiran 10. Riwayat Hidup Penulis

Data Diri

Nama

Ega Adhi Wicaksono

Tempat/Tanggal Lahir

Jakarta, 16 Agustus 1993

Jenis Kelamin

Laki-laki

Agama

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SMP Taruna Andigha Bogor

2008-2011

SMA IT Al-Madinah Bogor

2011-2016

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2017- 2021

S2 dan S3 jurusan ilmu perikanan Universiras Hasanuddin (Skema beasiswa PMDSU).

Beasiswa yang pernah diterima

1. Beasiswa Peningkatan Prestasi Akademik (PPA), Januari – Desember 2013
2. Beasiswa Program Master Menuju Doktor Untuk Sarjana Unggul (PMDSU), Agustus 2017 – Agustus 2021

Penelitian

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Seminar Internasional

1. International Conference on Maritime Sciences an Advances Technology (MSAT) 2nd : in framework of the sustainable development goals. Makassar, 7-8 Agustus 2019.
2. Marine Resilience and Sustainable Development (MARSAVE) 2nd. Makassar (Daring), 10 Oktober 2020.