

## 8. LAMPIRAN

### 8.1. Level Akumulasi Senyawa Logam Berat pada Ikan Air Tawar Di perairan Indonesia

Table 7. Data Konsentrasi senyawa Logam Berat pada Ikan di Perairan Indonesai

Lokasi	Spesies	Kadar (ppm)				Referensi
		Hg	Cd	Pb	As	
Danau Sipin, Jambi	<i>Pangasius</i>	0,1660 -	-	-	-	<i>Syahrizal et al, 2017</i>
	<i>hypophthalmus</i>	0,2772	-	-	-	
Perairan Dumai, Riau	<i>Sciaena russeli</i>	-	0,098 -	3,979 -	-	Nurrachmi et al, 2011
		-	0,103	4,109	-	
Ciliwung River, Jakarta	<i>Pterygoplichthys pardalis</i>	<0.001	<0.005	7.23 - 8.9	-	Ernawati, 2014
	<i>Cyprinus carpio</i>	-	-	0.033 -	-	
Waduk Cirata, Jawa Barat	<i>C. carassius</i>	-	0.003 -	-	-	<i>Salami et al, 2008</i>
	<i>Aequidens goldsum</i>	-	0.137	-	-	
	<i>Oreochromis niloticus</i>	-	0.080	-	-	
	<i>Oreochromis mossambicus</i>	-	0.105	-	-	
	<i>Chana striata</i>	-	0.105 -	-	-	
	<i>A. testudineus</i>	-	0.011 -	-	-	
	<i>Clarias gariepinus</i>	-	0.084	-	-	
Sungai Citarum Hulu, Bandung	<i>Clarias gariepinus</i>	-	0.092	-	-	Budiman et al. 2012
	<i>Hyposarcus</i>	-	0.092 -	0.640 - 20	-	

	<i>pardalis</i>		0.215			
	<i>Trichogaster</i>					
	<i>trichopterus</i>	-	0.162	-	-	
Danau Rawa	<i>Oreochromis</i>			0.11 -		Hidayah et
Pening, Semarang	<i>niloticus Linn</i>	-	0.01	0.18	-	al. 2014
Perairan	<i>Cyprinus</i>	0.000349	0,000307	0.000269	-	
Kaligarang,	<i>carpio L.</i>					Dewi et al,
Semarang	<i>Oreochromis</i>					2014
	<i>niloticus L.</i>	0.000575	0.000407	0.000812	-	
Sungai Brantas,	<i>Barbonymus</i>					Priatna et
Mojokerto	<i>gonionotus</i>	-	-	0.113	-	al. 2016
Kahayan River,	<i>Mystus wyckii</i>	0.12	-	-	-	
Kalimantan tengah	<i>Tuyun</i>	0.15	-	-	-	
	<i>Mystus</i>					
	<i>nemurus</i>	0.08	-	-	-	
	<i>Osteochilus</i>					
	<i>microcephalus</i>	0.02	-	-	-	
	<i>Osteochilus</i>					
	<i>melanopleura</i>	0.02	-	-	-	Elvince et
	<i>Bl</i>					al, 2008
Raungan River,	<i>Mystus</i>					
Kalimantan	<i>nemurus</i>	0.48	-	-	-	
Tengah	<i>Barbodes</i>					
	<i>gonionotus</i>	0.06	-	-	-	
	<i>Blkr</i>					
	<i>Barbodes</i>					
	<i>schwanefeldii</i>	0.03	-	-	-	
Perairan	<i>Channa striata</i>	0.05	0.32	-	-	
kalimantan barat	<i>Channa spl</i>	0.03	0.09	-	-	Arifin et al,
	<i>Trichogaster</i>	0.02	0.26	-	-	2017

	<i>trichopterus</i>					
	<i>Macrones</i>	0.04	0.29	-	-	
	<i>nemurus</i>					
	<i>Pangasius</i>	0.01	0.18	-	-	
	<i>pangasius</i>					
	<i>Walago attu</i>	0.06	0.30	-	-	
	<i>Oreochromis</i>					
Kanal Herstaning, Makasar	<i>niloticus</i>	0,0545	-	0,0195	-	Wanna et al, 2017
	<i>Trichopodus</i>					
	<i>pectoralis</i>	0,0816	-	0,0156	-	
	<i>Channa striata</i>	-	-	11,01	0.00	
Sungai Tondano, Sulawesi Utara	<i>Oreochromis</i>			10.83 -		Maddusa et al. 2017
	<i>mossambicus</i>	-	-	15.90	0.04	
keuretoe River, Aceh utara	<i>Osphronemus</i>		0.017 -			
	<i>goramy</i>	-	0.026	-	-	
	<i>Hemibagrus</i>		0.007 -			Sarong et al, 2013
	<i>nemurus</i>	-	0.016	-	-	
	<i>Anguilla</i>		0.018 -			
	<i>marmorata</i>	-	0.026	-	-	
Sungai Kalimas, Surabaya	<i>Oreochromis</i>			0.021 -		Jakfar et al, 2014
	<i>niloticus</i>	-	-	0.026	-	
		0,5	0,05	0,2	-	FAO (2003)
Batas Aman					0,25	BPOM (2018)

Keterangan : (-) Data Tidak Tersedia

## 8.2. Level Akumulasi Senyawa Logam Berat Pada Ikan Air Laut Di perairan Indonesia

Table 8. Data Konsentrasi senyawa Logam Berat pada Ikan Air Laut di Perairan Indonesai

Lokasi	Spesies	Kadar (ppm)				Referensi
		Hg	Cd	Pb	As	
Laut Batam, Kepulauan Riau	Sphyraena sp	-	-	1.695	-	<i>Suheryanto et al, 2018</i>
Perairan Utara Jawa	Euthynnus sp	-	0.2760	0.156	-	<i>Hananingty as, 2017</i>
Porong costal, Jawa Timur	Leiognathus equulus	-	0.69	0.01	<0.00 1	<i>Soegianto, 2008</i>
	Coilia dusumieri	-	0.63	0.10	0.01	
	Johnius belengeri	-	0.36	0.01	0.01	
	Mugil vaigiensis	-	0.21	<0.001	0.01	
	Arius leptonotacant hus	-	0.54	<0.001	0.02	
	Leiognathus equulus	-	0.05	0.07	0.20	
	Coilia dusumieri	-	0.02	0.10	0.31	
	Johnius belengeri	-	0.03	0.28	0.15	
	Mugil vaigiensis	-	0.01	0.07	0.33	
	Arius leptonotacant hus	-	0.02	0.19	0.18	
Gresik costal, jawa timur					<i>Soegianto, 2008</i>	

	Trichiurus sp	-	0.05	0.33	-	
	Arius sp	-	0.04	0.32	-	
	Arius	-	0.04	0.01	-	
Perairan	maculatus	-				
kalimantan barat	Johnius sp	-	0.07	0.26	-	Arifin et al, 2017
	Chorinemus	-	0.10	0.31	-	
	tala	-				
	Rastrelliger	-	0.35	0.54	-	
	faughni	-				
	Mugil	-	0.4328	0.1684	-	
Teluk Bena, Bali	cephalus	-	0.7901	4.99	-	Mardani et al, 2018
	Siganus	-	0.1154	0.1652	-	
	guttatus	-	0.2931	0.3977	-	
Kaluku Bodoa	Siganus sp.	-	-	-	1.477	Musfirah et al, 2016
Costal, Makasar	Leiognatus	-	-	-	1.589	Musfirah et al, 2016
Untia Costal,	equulus	-	-	-		
Makasar	Myripristis	0.03	-	-	-	Narasiang et al. 2015
teluk manado	pralinia	0.42	-	-	-	
	Pilchard	0.0004	-	-	-	
Danau Sentani,		98	-	-	-	Malongi, 2014
Papua	Plectropomus	0,0007	-	-	-	
	Leopardus	40	-	-	-	
		0,5	0,05	0,2	-	FAO (2003)
Batas Aman		-	-	-	0,25	BPOM (2018)

Keterangan : (-) Data Tidak Tersedia

### 8.3. Level Akumulasi Senyawa Logam Berat Pada Ikan kerang Di perairan Indonesia

Table 9. Data Konsentrasi senyawa Logam Berat pada Kerang di Perairan Indonesai

Lokasi	spesies	Kadar (ppm)				Referensi
		Hg	Cd	Pb	As	
Kawasan hilir sub DAS Krueng Meureubo, Aceh Barat	<i>Anodonta</i> <i>sp</i>	0,074 - 0,304	-	-	-	<i>Munandar</i> <i>et al, 2016</i>
Perairan Pulau Pasaran, Bandar Lampung	<i>Anadara</i> <i>granosa</i>	-	-	10,58 - 206,51	-	Rahmah et al, 2019
Pesisir Belawan, Sumatra Utara	<i>Anadara</i> <i>antiquata</i>	-	1.5 - 1.6	3.6 - 5.6	-	Melisa et al, 2015
Teluk Kelabat Bangka Barat	<i>Anadara</i> <i>granosa</i>	-	-	0,00001	-	Selpiani et al, 2015
Pantai Keranji Bangka Tengah	<i>Anadara</i> <i>granosa</i>	-	-	0,00001	-	
Muara Kamal, Teluk Jakarta	<i>Perna</i> <i>viridis L</i>	0.0017 - 0.012	0.24 - 0.743	0.92 - 1.485	-	<i>Putri et al,</i> <i>2012</i>
Sidoharjo, Jawa Timur	<i>Anadara</i> <i>granossa</i>	-	-	0.667 - 1.492	-	<i>Mahmudi</i> <i>et al, 2015</i>
Perairan Mangkang, Jawa Tengah	<i>Anadara</i> <i>granossa</i>	3,923	2,206	-	-	<i>Wulandari</i> <i>et al, 2009</i>
Perairan Morodemak, Jawa Tengah	<i>Anadara</i> <i>granossa</i>	1,334	3,441	-	-	<i>Wulandari</i> <i>et al, 2009</i>
Perairan Banjir Kanal Timur, Jawa Tengah	<i>Anadara</i> <i>granossa</i>	0,583	16,770	-	-	<i>Wulandari</i> <i>et al, 2009</i>
Muara lombok barat	<i>Anadara</i> <i>granossa</i>	0,02 - 0,07	-	-	-	<i>Rahayu et</i> <i>al, 2015</i>
	<i>Anadara</i> <i>antiquata</i>	0,032 - 0,077	-	-	-	
Sungai Tondano, Sulawesi Utara	<i>Anadara</i> <i>granossa</i>	-	-	-	0,57 mg/ L	<i>Mabuat et</i> <i>al, 2017</i>

Perairan Sulele, Sulawesi Barat	<i>Anadara</i>			3,75 –		<i>Rahmawati et al, 2015</i>
	<i>granosa</i>	-	-	3,87	-	
	<i>Polymesoda erosa</i>	-	-	5,00 –	-	
Perairan kalimantan barat	<i>Anadonta alba</i>		0.07	0.29		<i>Arifin et al, 2017</i>
	<i>Anadara granosa</i>		0.1	0.16		
	<i>Anadara</i>	0.024 -				
Sentani lake, Papua	<i>Trapezia</i>	1.678				Malongi, 2014
Batas Aman		0,5	0,05	0,2		FAO (2003) BPOM (2018)
					0,25	

Keterangan : (-) Data Tidak Tersedia

#### 8.4. Level Akumulasi Senyawa Organoklorin Pada Ikan dan Kerang Di perairan Indonesia

Table 10. Data Konsentrasi senyawa Organoklorin pada Ikan dan Kerang di Perairan Indonesia

Lokasi	Spesies	Kadar (mg/kg)					Referensi
		DDT	Aldrin	Endrin	Heptachlor	BHC	
Teluk Lampung	<i>Synodus sageneus</i>	0.025 ppm	-	-	-	0.0012 ppm	Sudaryanto et al, 2007
	Juvenile	0.012 ppm	-	-	-	0.00042 ppm	
	<i>Priacanthus macracanthus</i>	0.024 ppm	-	-	-	0.0011 ppm	
	<i>Lethrinus</i>	0.120	-	-	-	0.0021	

	amboinensi	ppm				ppm	
	s	0.00057	0.00007	0.00034	0.00008	0.0000016	
Teluk Jakarta	Perna viridis	6 - 2 ppm	5 - 1 ppm	5 - 6 ppm	9 - ppm	05 - 61 ppm	Edward, 2016
	Telkara perchlet	0.750 ppm	-	-	-	0.0009 ppm	
	Siganus canaliculatus	0.073 ppm	-	-	-	0.0007 ppm	
	Scomberoides lysan	0.550 ppm	-	-	-	0.0011 ppm	
Teluk Jakarta	Pugnose ponyfish	0.170 ppm	-	-	-	0.0007 ppm	Sudaryanto et al, 2007
	Scomberomorus maculatus	0.160 ppm	-	-	-	0.00044 ppm	
	Terapon jarbua	0.260 ppm	-	-	-	0.0032 ppm	
	Rastrelliger kanagurta	0.120 ppm	-	-	-	0.0074 ppm	
muara anggrek teluk Jakarta	Perna viridis	0.200 ppm	-	-	-	< 0.001 ppm	
	Mytilus edulis	0.240 ppm	-	-	-	< 0.001 ppm	Ramu et al, 2007
	Perna viridis	0.480 ppm	-	-	-	0.0013 ppm	
Cilincing, Teluk Jakarta	Mytilus edulis	0.210 ppm	-	-	-	< 0.001 ppm	
Waduk	Oreochromis	0,0178 -	-	-	-	-	Panelin,



Saguling, Bandung Barat	is niloticus	0,2072 ppm	-	-	-	0.00096 ppm	2016
	Helostoma temminckii	0.800 ppm	-	-	-	0.00096 ppm	
	Cyprinus carpio	0.37 ppm	-	-	-	0.0015 ppm	
Sungai Ciliwung, Bogor	Oreochromis mossambicus	1.1 ppm	-	-	-	0.00026 ppm	Sudaryan to et al, 2007
	Clarias batrachus	0.610 ppm	-	-	-	0.0019 ppm	
Perairan Sukabumi, Jawa Barat		0,0005 ppm	-	-	-	0,0005 ppm	Taufik, 2011
Perairan timur pesisir semarang	Bivalvia	0.02859 ppm	0 ppm	0.0372 ppm	0.02545 ppm	-	Suryono et al, 2017
Sungai citarum, jawa tengah	Clarias sp.	0.00370 ppm	0.01333 ppm	0 ppm	0.0185 ppm	-	Rahmawati et al, 2013
Belawan, medan		0.00030 ppm	-	-	-	< 0.00001 ppm	
Teluk Harun, Lampung		0.0007 ppm	-	-	-	< 0.00001 ppm	
	Perna viridis	0.0006 - 0.001 ppm	-	-	-	< 0.00001 ppm	Sudaryan to et al, 2005
Bondet, Cirebon		0.0031 ppm	-	-	-	0.00003 ppm	

Genjer, Surabaya	0.0015 ppm	-	-	-	< 0.00001 ppm
Maros, sulawesi utara	0.0001 pmm	-	-	-	< 0.00001 ppm

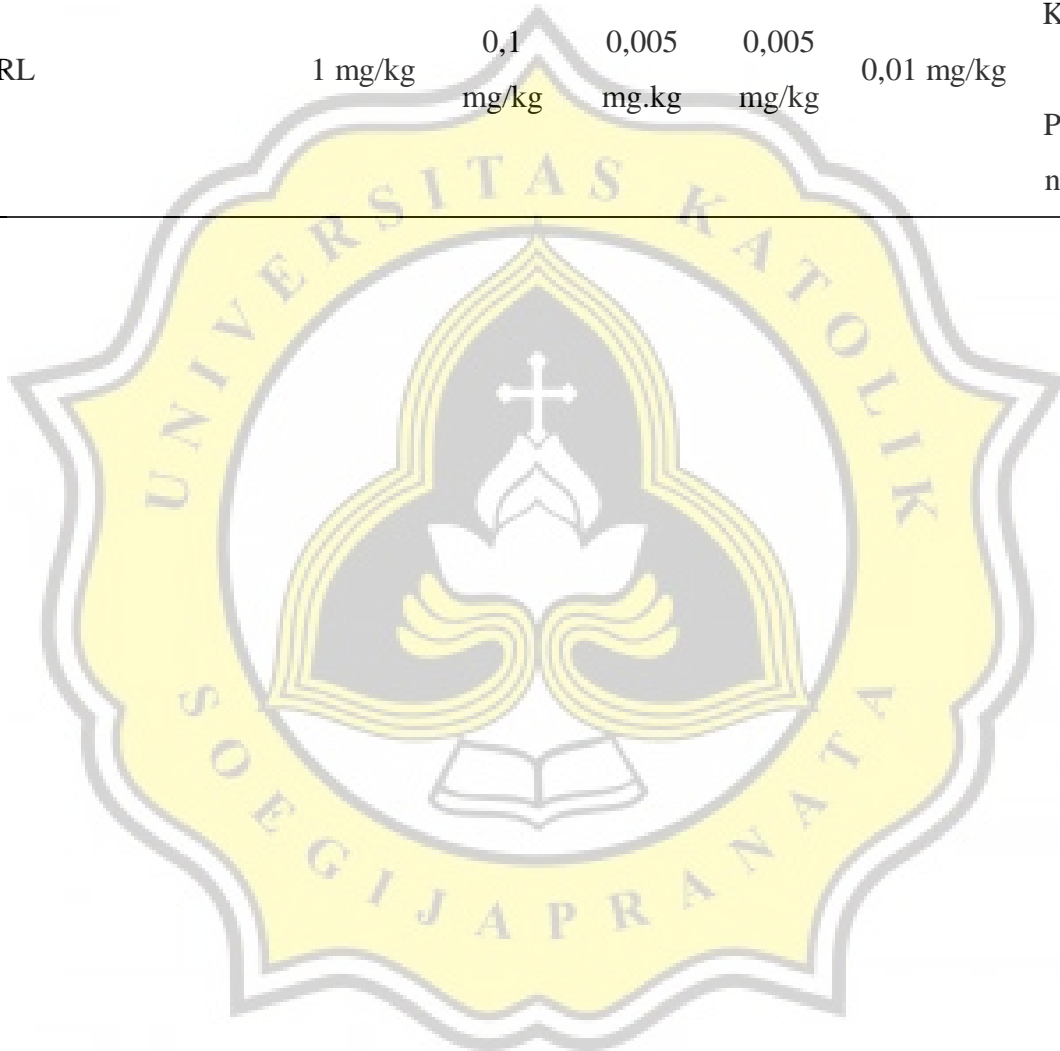
BRL

1 mg/kg

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mg/kg

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