

Dampak pencemaran logam berat terhadap kualitas air laut dan sumberdaya perikanan: studi kasus kematian massal ikan-ikan di teluk Jakarta

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Abstrak

Pengamatan kadar logam berat dalam air laut di Teluk Jakarta telah dilakukan pada bulan Mei 2004. Logam berat yang diteliti adalah Hg, Pb, Cd, Cu, dan Ni. Pengamatan ini ada kaitannya dengan kematian massal ikan-ikan yang terjadi di Teluk Jakarta. Pengamatan ini dilakukan di pantai Ancol 1 (3 stasiun), muara Sungai Dadap (4 Stasiun), pantai Ancol 2 (4 stasiun) dan Cilincing (3 stasiun). Hasilnya menunjukkan kadar Hg, Cd dan Cu rerata di pantai Ancol 1 berturut-turut adalah <0.001 ppm, Pb 0.001 ppm, Zn 0.004 ppm, dan Ni 0.001 ppm. Di pantai Ancol 2 kadar Hg, Cd, dan Zn rerata berturut-turut adalah <0.001 ppm, Pb 0.002 ppm, dan Cu 0.001 ppm dan Ni 0.0017 ppm. Di Cilincing kadar Hg, Cd, dan Zn rerata adalah <0.001 ppm, Pb dan Cu masing-masing 0.002 ppm, dan Ni 0.0045 ppm. Di muara Sungai Dadap kadar Hg dan Cd masing-masing adalah 0.001 ppm, Pb dan Zn masing-masing adalah 0.0027 ppm, Cu 0.001 ppm, dan Ni 0.0012 ppm. Di pantai Ancol 3 kadar Hg rerata adalah 0.021 ppm, Pb 0.55 ppm dan Cd 0.1 ppm. Kadar keenam logam berat tersebut di pantai Ancol 1, 2, Cilincing, dan muara Sungai Dadap relatif lebih rendah dibandingkan dengan NAB yang ditetapkan oleh Kantor MNLH (2004) untuk biota laut yakni 0.001 ppm untuk Hg dan Cd, 0.008 ppm untuk Pb dan Cu, dan 0.05 ppm untuk Zn dan Ni, sedangkan di pantai Ancol 3 kadar Hg, Pb, dan Cd lebih tinggi dibandingkan dengan NAB tersebut. Dengan demikian kadar Hg, Pb, Cd, Cu, Zn, dan Ni di perairan pantai Ancol 1, 2, Cilincing dan muara Sungai Dadap belum berbahaya bagi kehidupan ikan-ikan di Teluk Jakarta, sedangkan di perairan Ancol 3 kadar Hg, Pb, dan Cd sudah berbahaya bagi kehidupan biota laut. Namun demikian kematian massal ikan-ikan di perairan ini bukan disebabkan oleh logam berat tersebut, akan tetapi oleh faktor lain yang salah satunya adalah ledakan mendadak fitoplankton beracun yang mengeluarkan toksin dimana air laut menjadi berwarna merah dan kejadian ini dikenal dengan pasang merah (red tide).

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Effect of Heavy Metals Pollution to Seawater Quality and Fishery Resources (Case Study on Fish Death in Jakarta Bay). Observation on heavy metals content in sea water were carried out in Jakarta Bay waters in May 2004. Heavy metals observed were Hg, Pb, Cd, Cu, Zn and Ni. This observation is conducted with fishes total death in this waters. Observation is done in Ancol beach 1 (3 stations), Ancol beach 2 (4 stations), Cilincing (3 stations), and Dadap River estuary (4 Station). The results showed that the average concentration of Hg, Cd and Cu in Ancol beach 1 were <0.001 ppm respectively, Pb is 0.001 ppm, Zn is 0.004 ppm, and Ni is 0.001 ppm. In Ancol beach 2 the average concentration of Hg, Cd, and Zn were <0.001 ppm, Pb is 0.002 ppm, Cu is 0.001 ppm and Ni 0.0017 ppm. In Cilincing the average concentration of Hg, Cd, and Zn were <0.001 ppm respectively, Pb and Cu were 0.002 ppm, and Ni was 0.0045 ppm. In Dadap River Estuary the average concentration of Hg and Cd were 0.001 ppm, Pb and Zn were 0.0027 ppm, Cu was 0.001 ppm, and Ni between 0.0012 ppm. The concentration of that sixth heavy metals in Ancol beach 1, 2, Cilincing, and Dadap River estuary still lower compared to the Threshold Value (TV) stated by The Office of State Ministry for Life Environment (2004) for sea biota namely 0.001 ppm for Hg and Cd,

0.008 ppm for Pb and Cd, 0.05 ppm for Zn and Ni. That way the concentration of Hg, Pb, Cd, Cu, Zn, and Ni in Ancol beach 1, 2, Cilincing and Dadap estuary not danger for sea biota, while in Ancol beach 3, the average concentration of Hg, Pb, and Cd has danger for sea biota. Thereby total death of fishes in this waters not caused by heavy metals, but by others factors, one of that factors is blooming toxic phytoplankton which produced toxin where sea water change to be red, and this phenomena known as red tide.