Analisis Risiko Kesehatan Akibat Pajanan Logam Berat Pada Hulu Aliran Sungai Citarum Bandung Provinsi Jawa Barat Tahun 2020 = Health Risk Assesment of Heavy Metal Exposure on The Upstream Citarum River Bandung, West Java Province In 2020

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Abstrak

Sungai Citarum merupakan sungai terpanjang di Prov. Jawa Barat dan menjadi sentral berbagai aktivitas masyarakat. Sejak berkembangnya industri dan bertambahnya jumlah penduduk, sungai Citarum telah tercemar oleh berbagai zat pencemar diantaranya merkuri (Hg), kadmium (Cd) dan timbal (Pb). Penelitian ini dilakukan di sekitar aliran sungai Citarum, yaitu Desa Majasetra Kec. Majalaya Kab. Bandung, Prov. Jawa Barat. Responden penelitian ini sebanyak 100 orang, sedangkan sampel lingkungan yaitu air, ikan dan sayur. Data penelitian dari responden dikumpulkan menggunakan kuesioner, sedangkan kandungan logam berat dalam sampel lingkungan dianalisis di laboratorium. Hasil penelitian menunjukkan konsentrasi Hg dalam sampel air sungai Citarum dan air sumur sebesar < 0,0002 mg/l. Konsentrasi Hg dalam 4 sampel ikan sebesar 0,31 mg/kg, 0,41 mg/kg, 0,17 mg/kg, 0,78 mg/kg. Konsentrasi Hg dari 4 sampel sayuran, 1 sampel sebesar 0,042 mg/kg dan 3 sampel lainnya sebesar < 0,02 mg/kg. Konsentrasi Pb dalam sampel air sungai Citarum dan sampel air sumur sebesar < 0,005 mg/l. Konsentrasi Pb dalam 4 sampel ikan sebesar 0,10 mg/kg, 0,18 mg/kg, 0,18 mg/kg, 0,28 mg/kg. Konsentrasi Pb dalam 4 sampel sayuran seluruhnya sebesar < 0,10 mg/kg. Konsentrasi Cd dalam sampel air sungai Citarum dan sampel air sumur sebesar < 0,002 mg/l. Analisis risiko merkuri (Hg) dalam seluruh sampel penelitian yaitu sampel air sungai Citarum, air sumur, ikan dan sayuran seluruhnya menunjukkan RQ > 1 artinya tidak aman dan berisiko. Analisis risiko timbal (Pb) dalam 3 sampel air sungai Citarum dan 3 sampel air sumur seluruhnya menunjukkan RQ < 1 artinya aman dan tidak berisiko. Analisis risiko Pb dalam 4 sampel ikan, 1 sampel menunjukkan RQ < 1 artinya aman dan tidak berisiko, sedangkan 3 sampel lainnya menunjukkan nilai RQ > 1 artinya tidak aman dan berisiko. Analisis risiko Pb dalam 4 sampel sayuran seluruhnya menunjukkan RQ < 1 artinya aman dan tidak berisiko. Analisis risiko kadmium (Cd) dalam 3 sampel air sungai Citarum dan 3 sampel air sumur seluruhnya menunjukkan RQ < 1 artinya aman dan tidak berisiko. Analisis risiko Cd dalam 4 sampel ikan seluruhnya menunjukkan nilai RQ < 1 artinya aman dan dan berisiko. Analisis risiko Cd dalam 4 sampel sayuran seluruhnya menunjukkan RQ < 1 artinya aman dan tidak berisiko.

.....Citarum River is the longest river in Prov. West Java and become the center of various community activities. Since the development of industry and increasing population, the Citarum river has been polluted by various pollutants including mercury (Hg), cadmium (Cd) and lead (Pb). This research was conducted around the Citarum river, namely Majasetra Village, Kec. Majalaya Kab. Bandung, Prov. West Java. The respondents of this study were 100 people, while the environmental samples were water, fish and vegetables. Research data from respondents was collected using a questionnaire, while the content of heavy metals in environmental samples was analyzed in the laboratory. The results showed that the concentration of Hg in Citarum river and well water samples was < 0.0002 mg/l. The concentration of Hg in 4 fish samples was 0.31 mg/kg, 0.41 mg/kg, 0.17 mg/kg, 0.78 mg/kg. The concentration of Hg from 4 samples of vegetables, 1 sample was 0.042 mg/kg and 3 other samples were < 0.02 mg/kg. The concentration of Pb in

Citarum river water samples and well water samples was < 0.005 mg/l. The concentration of Pb in 4 fish samples was 0.10 mg/kg, 0.18 mg/kg, 0.18 mg/kg, 0.28 mg/kg. The total Pb concentration in 4 vegetable samples was < 0.10 mg/kg. The concentration of Cd in Citarum river water samples and well water samples was < 0.002 mg/l. Analysis of the risk of mercury (Hg) in all research samples, namely Citarum river water samples, well water, fish and vegetables all showed RQ > 1, meaning it was not safe and risky. The risk analysis of lead (Pb) in 3 samples of Citarum river water and 3 samples of well water all showed RQ < 1 which means it is safe and not at risk. Analysis of the risk of Pb in 4 fish samples, 1 sample showed RQ < 1 meaning safe and not risky, while the other 3 samples showed RQ values ââ> 1 meaning unsafe and risky. Analysis of the risk of Pb in 4 samples of vegetables all showed RQ < 1 which means it is safe and not at risk. Analysis of the risk of cadmium (Cd) in 3 samples of Citarum river water and 3 samples of well water all showed RQ < 1 meaning safe and not risky. Analysis of the risk of Cd in 4 fish samples all showed an RQ value < 1 which means it is safe and risky. Analysis of the risk of Cd in 4 samples of vegetables all showed RQ < 1 which means it is safe and not at risk.