

Tinjauan Biosorpsi Logam Berat Pb dan Cd Oleh Jamur Makro

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Abstract	<p>AbstrakKeberadaan logam berat perlu ditanggulangi, salah satunya dengan cara biosorpsi. Biosorpsi merupakan salah satu metode remediasi yang paling tepat digunakan dalam menanggulangi pencemaran logam berat. Proses secara efisien dapat menyerap logam berat terlarut bahkan logam berat yang ada dalam larutan kompleks yang sangat encer. Jamur makro merupakan contoh biosorben yang dapat digunakan dalam biosorpsi. Pemanfaatan jamur makro sebagai biosorben sangat tepat dilakukan karena keanekaragaman jenisnya tinggi, cepat tumbuh dengan kemampuan metabolisme yang beragam pada berbagai senyawa organik dan anorganik, mudah didapatkan, lebih aman karena tidak menyebabkan korosi atau menghasilkan bahan berbahaya, teknologinya sederhana, perawatannya mudah dan produk akhir dapat didaur ulang, serta dapat mengakumulasi logam berat dengan konsentrasi tinggi. Jenis-jenis jamur makro yang sudah digunakan dalam biosorpsi logam berat di beberapa negara antara lain <i>Agaricus bisporus</i>, <i>Auricularia polytricha</i>, <i>Calocybe indica</i>, <i>Ganoderma carnosum</i>, <i>Flammulina velutipes</i>, <i>Fomes fasciatus</i>, dan <i>Volvariella volvacea</i>. Sementara itu, penelitian menggunakan jamur makro di Indonesia dalam biosorpsi logam berat sangat terbatas yakni pada jenis <i>Phanerochaete chrysosporium</i>, <i>Omphalina</i> sp., dan <i>Pholiota</i> sp. Mengingat tingginya keanekaragaman jamur makro di Indonesia, maka potensi biosorpsi logam berat khususnya Pb dan Cd oleh jamur makro sangat berpeluang untuk diteleti lebih lanjut.</p> <p>AbstractHeavy metals can accumulate in seawater, sediments and in the marine biota that live in them, eventually entering the food chain which is very dangerous to health. The presence of these heavy metals needs to be overcome, one of which is by means of biosorption. Biosorption is one of the most appropriate remediation methods used in tackling heavy metal pollution. The biosorption process can efficiently absorb dissolved heavy metals and even heavy metals present in very dilute complex solutions. Macro fungi are examples of biosorbents that can be used in biosorption. Utilization of macro fungi as biosorbents is very appropriate because of the high diversity of species, fast growing with diverse metabolic abilities on various organic and inorganic compounds, easy to obtain, strong morphology, safer because they do not cause corrosion or produce harmful materials, simple technology, easy maintenance and the final product can be recycled, can accumulate heavy metals with high concentrations. The types of macro fungi that have been used in the biosorption of heavy metals in several countries include <i>Agaricus bisporus</i>, <i>Auricularia polytricha</i>, <i>Calocybe indica</i>, <i>Ganoderma carnosum</i>, <i>Flammulina velutipes</i>, <i>Fomes fasciatus</i>, and <i>Volvariella volvacea</i>. Meanwhile in Indonesia, research on the use of macro fungi in heavy metal biosorption is very limited to the <i>Phanerochaete chrysosporium</i>, <i>Omphalina</i> sp. and <i>Pholiota</i> sp. Considering the high diversity of macro fungi in Indonesia, the potential for biosorption of heavy metals, especially Pb and Cd by macro fungi, is very likely to be investigated further.</p>
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