Isolasi dan Identifikasi Bakteri Pereduksi Sulfat pada Area Pertambangan Batu Bara Muara Enim, Sumatera Selatan

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Abstrak

Sulfate reducing bacteria utilize sulfate as their terminal electron acceptor and reduce it to sulphide. Acid mine drainage, by-products of mining activities, is an acidic sulfate-rich wastewater suitable habitat for sulfate reducing bacteria. Isolation and identification of sulfate reducing bacteria collected from Muara Enim coal mining, South Sumatera was carried out at Laboratory of Environmental Biotechnology, Indonesian Center for Biodiversity and Biotechnology (ICBB), Bogor, and Laboratory of Microbiology, Faculty of Veterinary, Bogor Agricultural University. Postage B liquid media was used for isolation and purification via serial dilution. Physiological and biochemical characterization was done based on Bergey's Manual of Determinative Bacteriology. Fifteen pure isolates have been isolated with diverse characteristics. Eight isolated can sustain at pH 3, while the rest sustain at 4 pH 4 or above. Sulfate reduction efficiency of each isolated were different, but increased as the pH increased. The bacteria are classified as Desulfovibrio sp., which is characterized straight rods, motile, non spore-forming and able to grow in simple organic carbon