EFEKTIFITAS BIOREMEDIASI LOGAM BERAT Cr LIMBAH INDUSTRI OLEH CENDAWAN EKTOMIKORIZA Pisolithus tinctorius DALAM KULTUR MURNI

Abstrak:

The Objectives of this research were to find out the effectiveness of bioremediation of heavy metal Cr from industrial waste sediment by fungi Ectomycorrhzyal Pisolithus Tinctorius, the weight of fungi biomass, and the decreasing of media acidity in each industrial waste concentration treatment for different incubation time. This research used 4 different industrial waste concentrations, they were 0.5, 1 and 1.5 gr, with different incubation times 5, 10, 20 and 30 days. Each treatment was repeated 4 times, control treatment was done in sterile media (without culture of fungi) which was added certain concentration of industrial waste according to the treatment. The result of the research showed that the dry weight of the fungi increased and the decreasing of pH media depended on the length of the incubation time in every industrial waste concentration. At the end of the incubation (30 days) the weight of the fungi reached 1, 2.14, 0.67 and 0.86 g dry weight, and the decreasing of the pH reached 3, 2.1, 2.5 and 2.1 for industrial waste concentrations 0, 0.5, 1 and 1.5 g respectively. The result of the variant analysis both dry weight and pH media suggested that there were no significant different among treatments (p>0.05). The bioaccumulation of heavy metal by fungi P. Tinctorius reached 0.08, 0.45 and 0.70 mg Cr/g dry weight of the fungi, and bioremediation of heavy metal Cr was at the level of 1.6, 2.4 and 1.9 % for industrial waste concentrations 0.5, 1 and 1.5 gr respectively. The result of variant analysis for bioaccumulation Cr and bioremediation Cr suggested that there were no significant different among the treatments (p>0.05).

Keyword:

Bioremediation, Bioaccumulation, Ectomycorrhzyal, Pisolithus tinctorius, Heavy metal Cr, Industrial waste