

Batik Dye Decolorization by Immobilized Biomass of Aspergillus sp.

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Abstract	<p>The rapidity of the batik industry in the Former Residence of Banyumas raises problems. Wastewater that discharged into upstream causes accumulation in downstream up to empties into the sea, so does not only threatens the river ecosystem but also has the potential to cause problems in the mangrove ecosystem in Segara Anakan (the downstream area of the Citanduy River which is very close to the downstream area of the Serayu River Basin). The strategy of batik wastewater management in an effort not to pollute the environment is offered. This study tried indigosol blue batik dye which are often used in the batik industry by using immobilization of the pure fungi biomass compared to biomass which was induced with tannic acid. Combination between incubation time and shaking treatment in immobilization of pure <i>Aspergillus sp.</i> biomass that capable to decolorize indigosol blue batik dye were also done. Data of degradation percentage was analyzed using spectrophotometry. The decolorization result of comparison between biomass of <i>Aspergillus sp.</i> with or without the addition of tannic acid under agitated treatment conditions at 24, 48, 72 hours were 54.7, 75.8, 77.4% and 78.8, 84, 80.1%, respectively. While the result of treatment under static conditions were 65.4, 86.3, 73.7% and 79.2, 78.6, 68.2, respectively. The next experiment is showed that 48th hour on static treatment have the highest decolorization percentage up to 67.1%. The pH was measured before and after treatment. The pH after treatment were decrease both in static and shaking treatment, and also in control treatment both in static and saker treatment. Based on the results of the research, the fact is the use of immobilization biomass of <i>Aspergillus sp.</i> in the form of alginate beads can be used for decolorization application in the environment.</p>
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