

Optimization of incubation time for the effective Biodecolourization of Acid orange-VII by immobilized laccase enzyme under laboratory condition

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ABSTRACT

The undesirable limitations of free enzyme catalysts may be overcome by the use of immobilized enzymes. Immobilization is achieved by fixing enzymes to or within solid supports, as a result of which heterogeneous immobilized enzyme systems are obtained. The laccase enzyme was immobilized in sodium alginate gel and was used for the decolourization of acid orange-7. The decolourization was studied by taking the absorbance at the initial and final stages. The percentage of degradation was calculated. The effect of various incubation times (in Minutes) shows that the maximum decolourization by the immobilized laccase enzyme is 60 min. The study on the stability of immobilized laccase enzyme indicates that the immobilized laccase enzyme could be used for 23 cycles of acid orange-7 decolourization.