

Przystas, W., Zablocka-Godlewska, E., Grabinska-Sota, E., Urbaniak, M. Potential Ability of Some Ligninolytical Fungal Strains to Decolorize Synthetic Dyes. *Ochrona Srodowiska* 2010, Vol. 32, No. 3, pp. 15–20.

Abstract: Of the numerous methods that are in use for reducing colorants (many of the dyes are toxic), preference should be given to biological methods, as they do not produce additional groups of troublesome pollutants. In recent times much consideration has been focused on fungal decolorization of dye effluents. The aim of this work was to evaluate the potential ability of 24 isolated fungal strains (MW11, MW13, MW31, MW34, MW36, MW44, MW45, MW48, MW49, MW60, MW66, MW73, MW79, MW84, MW86, MW103, MW113, MW132, MW133, MW140, MW141, MW143, MW170 and MW171) to decolorize the synthetic dyes chosen. Use was made of fluorone dyes (erythrosine and Bengal rose), triphenylmethane dyes (brilliant green and gentian violet), the diazo Evans blue dye, and the following two media, YEPG and MSB (both liquid and solid). The experimental results have corroborated the ability of the strains to decolorize the dyes tested, in many instances with an efficiency higher than 90%. The strains MW113 and MW49 were found to be particularly active regardless of the medium applied. The study has revealed that the efficiency of the decolorization process depends not so much on the group into which the dye has been classified, as on the specific structure and composition of the dye, as well as on the form of the medium and on the strain used in the experiment. This finding substantiates the necessity of using a set of different tests even in the screening experiments, because the results of a single test may not be sufficient for a complete description of the potential abilities of the organisms tested.

Keywords: Decolorization, fungi, azo dyes, fluorone dyes, triphenylmethane dyes.