

Environmental Microbiology and Biotechnology

P-135 - PRELIMINARY EVALUATION OF DECOLOURISATION OF PROCION AND EVERDIRECT DYES BY YEASTS

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Background

The textile sector is a large and worldwide business and the most important in many countries [1]. This economic activity generates high volumes of effluents due to the large quantities of water used in fabric processing [2]. Furthermore, dyes are resistant to biodegradation and are responsible for toxicity and mutagenic effects to the aquatic life [3, 4]. The aim of this work was to evaluate the ability of selected yeast strains to decolourise specific dyes frequently used in the textile industry, namely reactive dyes.

Method

Previously selected yeasts were tested to their ability to decolourise dyes commonly used in textile industries. Procion Red, Procion Yellow, Procion Navy and Everdirect Yellow were selected for this work. Yeasts HOMOGS20, HOMOGST27A and LIIS36 were cultivated in NDM medium supplemented with 100 mg/L of each dye, in a 24 well microplate that was incubated at 25 °C for 48h and 100 rpm. Decolourisation was observed by naked eye. The yeast's ability to decolourise dyes in a solid medium was also tested using NSDM medium supplemented with 100 mg/L of dye and plates were incubated at 25 °C for 48h. Decolourisation halos around colonies were observed as well as the colour of the colonies themselves.

Results & Conclusions

LIIS36 was the most effective and versatile strain with regards to the ability to decolourise the dyes tested. In these conditions, HOMOGST27A seems to be the only one that absorbed most of the dyes instead of performing true decolourisation.

References & Acknowledgments

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