

# Wastewater Bioremediation using White Rot Fungi: Validation of a Dynamical System

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Nowadays the wastewater treatment has become an important issue. In this work we want to validate a mathematical model, generalizing the one introduced in [1], that simulates the process of decolourisation of textile industry wastewater. To this aim selected white rot fungi are used to degrade a wide range of recalcitrant compounds, such as synthetic dyes [2].

Real data obtained in laboratory will be used to fit the parameters of our model, and a more general dynamical system will be studied. The qualitative analysis will be performed in such a way so as to study the behaviour of the wastewater and of the fungi as functions of time. The carbon has an important role in the system since it can sustain the fungal metabolism and growths.

## References

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- [2] A. Anastasi, F. Spina, A. Romagnolo, V. Tigini, V. Prigione, G.C. Varese, *Integrated fungal biomass and activated sludge treatment for textile wastewaters bioremediation*, Bioresour Technol. **123**: 106-111 (2012).