Some properties of coriolus sp. no. 20 for removal of color substances from molasses waste water

Coriolus No.20, belonging to the class Basidiomycetes, can remove color substances from molasses waste water (MWW). In the case of untreated MWW solution, the decrease was 82.5% in darkness under optimal conditions. This removal (= decolorization) was through the adsorption of melanoidin to the mycelium and the yield of adsorption was 9.67 and 12.12 mg per g of mycelium as dry basic in the case of autocaved mycelium and resting mycelium, respectively. The resting mycelium showed the highest adsorption yield (16.32 mg per g of mycelium) when the melanoidin solution was supplemented with 20% glucose solution.

In the fed-batch system, the strain showed a constant decolorization yield of 75% during four times replacements (32 days) in both untreated and treated MWW solutions.

In the continuous feed system for decolorization of untreated MWW solution, 10% of fresh untreated MWW solution was added every day after seven days of cultivation. The decolorization rate was constant (decolorization rate was 37.5%) during 12 days of operation.

In the continuous decolorization of concentrated untreated MWW solution, the strain showed a constant decolorization yield (about 70%) during three times feeding of fresh concentrated untreated MWW solution. But 10 ml of 20% glucose solution had to be added after 13 days cultivation to keep the reducing sugar concentration in the culture broth at more than 1.0%.