INTISARI

KEMAMPUAN ISOLAT-ISOLAT JAMUR DAN BAKTERI DALAM DEKOLORISASI BEBERAPA PEWARNA TEKSTIL

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Limbah cair industri tekstil mengandung berbagai jenis zat warna karena proses pewarnaan. Limbah cair tersebut dapat menyebabkan pencemaran lingkungan bila dibuang ke badan perairan tanpa pengolahan yang tepat. Beberapa mikroba telah diketahui mampu mendekolorisasi pewarna tekstil. Penelitian ini dilakukan untuk menguji isolat-isolat jamur dan bakteri dalam dekolorisasi pewarna tekstil.

Isolat-isolat jamur yang digunakan dalam penelitian adalah KRMS5, TPA4 dan JYGC1 sedangkan isolat-isolat bakteri yang digunakan adalah BYGC2 dan BYGC12. Isolat-isolat jamur kemudian diuji kemampuannya mendekolorisasi pewarna *Orange G* yang ditambahkan pada medium *Potato Dextrose Agar* (PDA) pada konsentrasi 25 ppm, 50 ppm dan 100 ppm. Isolat-isolat jamur tersebut juga diuji kemampuannya pada medium mineral. Isolat-isolat bakteri diuji kemampuannya mendekolorisasi *Methylene Blue* dan *Rhodamine B* masing-masing ditambahkan ke Nutrien Agar (NA) pada konsentrasi 5 ppm, 10 ppm dan 25 ppm. Isolat-isolat bakteri tersebut juga diuji kemampuannya pada medium mineral.

Kami telah mengisolasi tambahan isolat jamur yaitu KRMS5A dan KRMS5B, dari kultur KRMS5 karena terkontaminasi selama pemurnian. Hasil uji dekolorisasi menunjukkan bahwa isolat jamur KRMS5, KRMS5A, KRMS5B dan TPA4 mampu mendekolorisasi pewarna *Orange G*. Isolat bakteri BYGC2 dan BYGC12 mampu mendekolorisasi *Methylene Blue* tetapi tidak pada *Rhodamine B.*

Kata kunci: bakteri, jamur, dekolorisasi, *orange G, methylene blue, rhodamine B*

ABSTRACT

CAPABILITY OF FUNGAL AND BACTERIAL ISOLATES IN DECOLORIZING SOME TEXTILE DYES

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Textile industries wastewater contains various types of dyes due to coloring procceses. The wastewater may cause environmental pollution if discharged into water bodies without proper treatment. Some microbes have been known to be able to decolorize textile dyes. Some microbe have ben known to be able to decolorize textile dyes. The test will ability of some fungal and bacterial isolates in the decolorizing textile dyes.

Fungal isolates used in the study were KRMS5, TPA4 and JYGC1. While the bacterial isolates were BYGC2 and BYGC12. The fungal isolate were tested for their ability in decolorizing Orange G dyes added to Potato Dextrose Agar (PDA) at concentrations of 25 ppm, 50 ppm and 100 ppm. The ability was also tested in mineral broth medium. The bacterial isolates were tested for the ability to decolorize, Methylene Blue and Rhodamine B, respectively added to Nutrien Agar (NA) at concentration of 5 ppm, 10 ppm and 25 ppm. The bacterail isolate were tested for their ability in decolorizing Methylene Blue and Rhodamine B dyes added to Nutrien Agar at concentrations of 5 ppm, 10 ppm and 25 ppm. The ability was also tested in mineral broth medium.

We isolated to additional fungal isolate, i. e. , KRMS5A and KRMS5B, from KRMS5 culture due to impurities during purification of KRMS5. The results of decolorization test indicates that fungal isolate KRMS5, KRMS5A, KRMS5B and TPA4 were able to decolorize Orange G dyes. The bacterial isolate of BYGC2 and BYGC12 were able to decolorize Methylene Blue dyes but not Rhodamine B.

Keywords: bacterial, fungal, decolorization, orange G, methylene blue, rhodamine B