

Biodegradasi pewarna tekstil congo red oleh dua isolat bakteri = Biodegradation of congo red textile dye by two bacterial isolates

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Abstrak

Telah dilakukan penelitian biodegradasi pewarna tekstil congo red oleh kultur tunggal L2C dan kultur campuran L2C dan I4M. Biodegradasi pewarna tekstil dilakukan dengan kultur statis pada medium Bushnell-Haas dengan konsentrasi 1000 ppm congo red. Hasil biodegradasi kultur tunggal dan campuran dianalisis menggunakan Spektrofotometer. Uji toksisitas supernatan hasil biodegradasi diujikan terhadap perkecambahan biji jagung (*Zea mays*). Hasil penelitian menunjukkan kultur tunggal mampu mendegradasi congo red (97,79%) lebih baik dibandingkan dengan kultur campuran (26,24%). Hasil scanning pada supernatan maupun endapan mengindikasikan congo red telah terdegradasi. Uji toksisitas menunjukkan bahwa biji jagung yang diberi perlakuan supernatan berkecambah (50%) lebih banyak dibandingkan dengan biji jagung yang diberi perlakuan larutan congo red (33,33%). Panjang akar perlakuan supernatan menunjukkan hasil yang lebih baik dibandingkan perlakuan congo red sementara berat basah dan panjang total tidak berbeda nyata.

.....A research on biodegradation of congo red textile dye has been carried out using single culture (L2C) and mixed culture (L2C&I4M). Biodegradation used static culture in Bushnell-Haas medium with a congo red concentration of 1000 ppm. The results of single and mixed cultures biodegradation were analyzed using a spectrophotometer. The toxicity test of supernatant from biodegradation was tested against corn seed (*Zea mays*) germination. The results showed single culture is more capable of degrading congo red (97,79%) than mixed cultures (26,24%). The scanning of supernatant and the sediment indicated congo red was degraded. Toxicity tests showed that the corn seed germination treated with supernatant (50%) was better than the corn seed treated with congo red solution (33,33%). Root length of corn seed treated supernatant was better than the control congo red while the total wet weight and shoot length were not significantly different.