

JIRAPORN ARAYAMAYTHALERT : Color Removal by Quarternized
Crosslinked Ion-Exchange Resin Made from Agricultural Wastes

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The purpose of this research is to study the efficiency of dye removal using a quarternized crosslinked ion-exchange resin made from agricultural waste. The bagasse, water hyacinth and palm oil fiber were used as natural ion-exchange resin in the study. This research is targeted to compare the efficiency between three agricultural waste before and after being treated by quarternized crosslinked chemical substance. Two types of dye namely, Reactive dye (Remazol Black B, Remazol Brilliant Blue R and Remazol Brilliant Red 3BS) and Direct dye (Best Direct Black B, Sirius Blue KFCN and Sirius Rubine KZBL) were investigated using synthetic water, which contains these dyes at 10, 20, 30 mg/l. and the experiments were conducted by using the Jar test. After the experiments carried out, it was found that the removal efficiency of untreated bagasse, untreated water hyacinth and untreated palm oil fiber was less than that of the quarternized crosslinked resin made from these three agricultural wastes. The efficiency of these three untreated agricultural wastes is less than 4% (% removal per g of material). In contrast, the efficiency of the quarternized crosslinked ion-exchange resin, Q-R bagasse, Q-R water hyacinth and Q-R palm oil fiber is around 95-99%.

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