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KADESUCHA PULKHAM : HEAVY METAL REMOVAL BY ION EXCHANGE RESIN MADE FROM BAGASSE AND WATER HYACINTH. THESIS ADVISOR : PETCHPORN CHAWA-KITCHAREON, Ph.D. 310 pp. ISBN 974-584-207-9

Water-hyacinth and bagasse have been used as natural cation exchanger during this study. Water-hyacinth are compose of 43-44% cellulose, 12-13% lignin, 14-15% pentosans and various substances. Bagasse are composed of 82.52% holocellulose, 44% alphancellulose, 19.78% lignin, 27.21% pentosans and various substances. The remark recovery of copper, nickel and zinc ion in packed bed was studied, the variable considered being in influence of chemical treatment and metal cocentration in the solutions percolated. The experimental results the cation exchange capacity (CEC) of untreated water-hyacinth were found to be 0.686-0.809 meq/g and 0.330-0.496 meq/g for carboxymethyl water-hyacinth. The CEG Value was found to be 0.065-0.086 meq/g for untreated bagasse and 0.052- 0.069 meq/g for carboxymethyl bagasse. The values for copper exchange were always higher the those of nickel and zinc. The dynamic capacities increased with the dilution of solution percolated. The regeneration were completed recovery of metals with three bed volumes of 0.5 hydrochloric acid