



The treatment of high concentration nitrogen by phytoremediation process using water hyacinth (*Eichhornia crassipes* Mart.Solms.) and coontail (*Ceratophyllum demersum* L.)

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Nowadays, high concentration nitrogen from community and agricultural areas were the major sources of urgent environmental issues, which had motivated this study. The objective of this study was to compare the efficiency of high concentration nitrogen removal between water hyacinth (*Eichhornia crassipes* Mart. Solms.) and coontail (*Ceratophyllum demersum* L.). The experiment used laboratory scales and performed at National Institute of Technology Okinawa College, Japan. The experimental device was plastic cylinder with 4 L of 50 mg/L nitrogen concentration (inorganic form) and without the top cover. The experimental designs were divided into three groups; no plant or control, water hyacinth and coontail, each group included three replications. The experiments had been started on August 2016, and run for 15 days period. Water samples from experimental vessels were collected and analyzed every day by economical simple pack-kit method. The results showed that water hyacinth and coontail were removed as much as 80%, and 50%, respectively. This research concluded that water hyacinth was more effective for high concentration nitrogen removal than coontail under the experimental condition. We also had discussed the limitation of the latest experiment.

Keywords: High concentration nitrogen, Phytoremediation, Water hyacinth, Coontail