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Phytoremediation potential of *Azolla pinnata* on water quality and nutrients from agricultural water

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ABSTRACT

The area of polluted water expands day by day due to the rapid increase in agricultural activities. Application and the excessive amount of fertilizer in the agricultural activity can reduce the water quality. One of the alternative way to remove pollutants from polluted water is phytoremediation technique. This paper attempt to evaluate the potential of *Azolla pinnata* act as a phytoremediation to treat the agricultural water. Three types of media with different dosage which are tap water, water added with organic fertilizer (chicken manure: dosage range of 10–30 g), and water added with inorganic fertilizer (growing fertilizer: dosage range of 10–30 g) were employed. Media B10 (water added with 10 g organic fertilizer) had the highest removal efficiencies for NH_3–N, PO_4^{3-}, and NO_3^- with 25%, 38.5% and 30%. In addition, turbidity and pH value diminished to 15.65% and 18.6%, respectively. However, it indicated that *Azolla pinnata* has the potential as an agent of phytoremediation especially for water polluted with organic fertilizers.

Keywords: Water quality; Water pollution; Phytoremediation; Nutrient; Treatment

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