

# Improving the Nitrogen Mineralization of Dried *Azolla pinnata* as a Bio-fertilizer for Increased Rice Production in the Vertisol

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## Abstract

An incubation experiment was conducted to improve the rate of nitrogen mineralization of dried *Azolla pinnata* samples in the Akuse series of the Vertisol. Incubation was done for 60 days at soil moisture content of 40% and at room temperature of 28 °C. The available N (ammonium and nitrate N) was determined for each of the treatment samples on every tenth day after incubation by extracting soil sample with 1M KCl. The treatments were fresh azolla (FA), dry azolla (DA), dry azolla + urea (DA+U), pelleted dry azolla + urea (PDA+U) and the control (C), where neither azolla nor nitrogen fertilizer was applied. From 10 to 30 days after incubation, immobilization of nitrate N was observed for the treatments DA and PDA+U. Mineralization was highest for PDA+U treatment and the least for the DA treatment between 40-60 days after incubation. The addition to pelleted dried azolla of 3 µg/g urea fertilizer improved the nitrogen mineralization.