

## ABSTRACT

### **AZOLLA DECOMPOSITION AND CONTENT OF $\text{NH}_4^+$ SOIL OF SOME ELEMENTS IN RICE FIELDS OF DIFFERENT SOIL NUTRIENTS**

By

**ADI SUGARA**

Green fertilizer Azolla water fern contained nitrogen around 02,-0,3% of wet weight or 4-5% of dry weight and its decomposition was very fast, so it could be used as an alternative source of nitrogen for rice fields. This research aimed to study the decomposition of Azolla and  $\text{NH}_4^+$  content of soils derived from the application of Azolla in the water lassed soil that had different soil nutrient. The experiment design were conducted by randomized block design with five treatment of fertilizers and four replications. The treatment applied were to: T0: control, T1: NPK fertilizer, T2: NP fertilizers, T3: PK fertilizers, T4: NK fertilizers. Different nutrient content condition did not influenced Azolla dry weight, the content of N-total Azolla, C-organic Azolla, C/N ratio Azolla, soil reaction (pH) and decomposition rate after embedding. While in the content of  $\text{NH}_4^+$  the soil was influenced by the condition of soil nutrient which was different only on day 7. Along with Azolla decomposition process, Azolla dry weight, C-organic content, low C/N ratio Azolla, while N-total Azolla content and soil reaction (pH) increased after embedding. From Azolla decomposition side was not influenced by the soil content of nutrient, but it influenced the mineralization of  $\text{NH}_4^+$  or soil nitrogen content. On the soil applied by Azolla content of  $\text{NH}_4^+$ , the soil increased from day 3 up to day 14 after embedding. The content of  $\text{NH}_4^+$  of soil was really influenced by the treatment of giving N rather than that of which was not given or applied by N fertilizer. The content of  $\text{NH}_4^+$  soil on with out nitrogen soil (Control and PK) was actually lower than other soil. But, this had been approved whether the content of  $\text{NH}_4^+$  soil higher than that which was given N derived from Urea or Azolla.

Keywords: Azolla decomposition, Azolla Fertilizer, N Nutrient, and  $\text{NH}_4^+$  soil.