ABSTRACT

THE MEASUREMENT OF EVAPOTRANSPIRATION RATE OF PADDY (*Oryza sativa L.*) USING SEVERAL COMBINATION OF FERTILIZERS

By

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Paddy (*Oryza sativa L.*) is an important food crop. Rice is the primary food for most of Indonesian people. The greater Indonesian population is, the greater the need to meet it.

Fertilizer has played an important and strategic role in the increasing agricultural production and productivity. Demand of fertilizer in Indonesia has been continuing to increase in line with the demands of the plantation sector, especially oil palm, rubber, cocoa and others. Policy of subsidy and distribution of fertilizer has been executed starting from the planning of demand, determining the Highest Retail Prices (HET). However, these policies have not been able to ensure fertilizer adequacy of availability with the HET implemented. Availability of affordable fertilizer to farmers is a crucial issue.

There are some steps to overcome the limited subsidy of fertilizer. One of them is to promote the use of low priced organic fertilizers yet good quality. Nugroho et al (2011), developed an organic fertilizer called Organonitrofos. This organic fertilizer was made of composted fresh manure and enriched with phosphate rock and potential microorganisms (N-fixer and P-solubilizer). This organic fertilizer; however, needs to be consecutively tested in pot (pot experiment), plot (plot experiment), and field (field trial). This research was to test Organonitrofos in pot experiment.

The study aimed to analyze the effect of the use of some combinations of the fertilizers on paddy, the variables of which was analyzed for evapotranspiration, growth, and yield. The research was conducted in the Integrated Field Laboratory of the Faculty of Agriculture, University of Lampung, from January 2012 to April 2012. The experiment was conducted by using Completely Randomized Design (CR) with 7 treatments of fertilizer combination and 4 replicates. The results

showed that (1) plant growth and yield were not significantly affected by the treatment (2) Water use for evapotranspiration was significantly affected by the treatment of fertilizer combination (3) In the effectiveness of water use, chemical fertilizer, organic and combination fertilizer were not significantly (4) Treatment of Fertilizer combination can be recommended for use because it can reduce the use of chemical fertilizers. Thus, the use of fertilizer combination can reduce nitrogen 0,111 g/pot, phosphate 0,177 g/pot and potassium 0,138 g/pot from use of pure chemical fertilizer.

Keywords: rice, evapotranspiration, fertilizer, organonitrofos.