## ABSTRACT

## STUDY OF WATER BALANCE ON CULTIVATED LAND OF CHILI AT THE INTEGRATED FIELD LABORATORY UNIVERSITY OF LAMPUNG

**By**

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The aims of the research were (1) to analyze the water balance in the root zone of chili, (2) to determine the time of surplus and deficit of water with a water balance calculation procedures, (3) to calculate the proportion of rainfall that becomes surface runoff in chili cultivation of land, (4) to determine the amount of water needs and the provision of irrigation water during cultivation, and (5) to study the effect of rice straw mulch on the rate of crop evapotranspiration and surface runoff.

Field experiment was conducted at the Integrated Field Laboratory College of Agriculture, University of Lampung from 6 February to 5 April 2011. Field observations carried out on two experimental plots with rice straw mulch treatment (plot A) and without mulch as control (plot B) where are each equipped with a water storage pond at the downstream.

The results showed that (1) the consumptive use ($ET_c$) during the study on rice straw mulched plot (133.85 mm) was lower than that of the plot with no mulch (230.74 mm), (2) the proportion of rainfall that becomes runoff during the study on rice straw mulched plot (0.11) was lower than that of the plot with no mulch (0.16), (3) the use of rice straw mulch on chili can reduce the water loss due to evapotranspiration and minimize surface runoff.


Keywords: water balance, evapotranspiration, surface runoff