ABSTRACT

THE EFFECT OF HIGH WATER INUNDATION TO THE RATE OF GROWTH AND THE DECOMPOSITION OF AZZOLA IN RICE FIELD SOIL

By

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Indonesia is an agricultural country which makes rice as the main food source and will always be a strategic commodity. Therefore, the research of increasing the rice production continued. Meanwhile, research on the biology of soil and water inundation of wetland has not been done, especially the use of Azolla as an organic fertilizer in paddy field soil and tropical soil during rice cropping. The use of Azolla in rice field soil could be the indicator of changes in wetland rice ecosystems.

This research was conducted at the Faculty of Agriculture Greenhouse Lampung University, this research is related to the SRI (System of Rice Intensification), organic rice cultivation methods that gives priority to local potential or known as the environmental friendly agriculture. SRI methods strongly support the restoration of soil health and the health of users of their products. Organic farming in principle, emphasizing the principle of nutrient recycling through crop with how to restore some biomass into the soil, and the water conservation is able to provide a higher yield.

This research aims to study the rate of growth and decomposition of Azolla at different water levels. This research uses randomized block design (RAK) with four treatments and four replications, the treatment using different water levels on each - each test, namely: 0 cm, 3 cm, 5 cm, and 10 cm and 5-day observation of the day to- 3, 5, 7, 14, and 21. The data obtained were tested homogeneity with Bartlet and aditifitas test with Tukey test. Analysis of variance performed with 5% significance level, followed by BNT test at level 5%.

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The results find that the pool of water 10 cm high Azolla grows faster than the high pool of water 0 cm, 3 cm, and 5 cm because Azolla's growth is supported by water. The decomposition of Azolla seen from the observation of Azolla dry weight, easily decomposed by high standing water 0 cm because the decomposition process will occur faster in moist soil conditions than land flooded by water.

Keywords : Azolla, decomposition of Azolla, growth of Azolla.