APPLICATION OF STALE RICE LOCAL MICROORGANISMS AND INORGANIC FERTILIZERS ON COWPEA (*Vigna unguiculata*)

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ABSTRACT

The low productivity of cowpea in Indonesia has encouraged various efforts to increase production, such as the application of local microorganisms (MOL). MOL can improve soil quality and nutrient availability, thus cowpea productivity could be improved. This study was to examine the application of MOL made from stale rice and inorganic fertilizers on cowpea production. This field research was carried out in Antirogo village, Jember Regency from November 2022 to January 2023 using a randomized block design (RBD) within two factors. The first factor was stale rice MOL concentration, consisting of three levels, 0 ml/l, 200 ml/l, and 300 ml/l. The second factor was the inorganic fertilizers dose consisting of 20 g/plot, 30 g/plot, and 40 g/plot. The results showed that the 300 ml/l MOL significantly dominated the weight of 100 seeds (10.24 g) and the number of productive branches (20 branches) compared to the control (0 ml/l MOL). In addition, the inorganic fertilizer 40 g/plot showed significantly greater value than the other two fertilizer levels on fresh weight of pods per sample (103.17 g), fresh weight of pods per plot (957.34 g), dry weight of pods per plot (878 g), dry seed weight per sample (57.03 g) and dry seed weight per plot (710.22 g). Probably, the application of MOL increases the soil microorganisms' population thereby improving the process of decomposition and mineralization of organic matter. However, there was no significant interaction between MOL applications of stale rice.

Keywords: Cowpea, Inorganic Fertilizer, Local Microorganisms, Stale rice.