THE EFFECTIVENESS OF EFFECTIVE MICROORGANISM ON GROWTH PERFORMANCE OF PADDY

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ABSTRACT

THE EFFECTIVENESS OF EFFECTIVE MICROORGANISM ON GROWTH PERFORMANCE OF PADDY

High use of chemical fertilizer in rice cultivation lead to consumption of chemical residue in environment. Effective microorganism (EM) fertilizer application can reduce the widespread use of chemical fertilizer. A study was conducted to observe the effectiveness of effective microorganism application on growth and development of rice cultivation. By applying effective microorganism fertilizer, Bokashi was able to promote growth performance of rice cultivation in vegetative phase. This study was conducted in greenhouse located at UiTM Jasin by using completely randomize design (CRD). The treatment was application of different concentration of chemical fertilizer (NPK) and Bokashi fertilizer (EM) in variety of rice MR220 to observe the effectiveness in improving the growth performance. Treatment 0 act as control with 100% of NPK fertilizer application, treatment 1 with 70% NPK and 30% EM fertilizer application, treatment 2 with 50% of NPK and EM fertilizer, treatment 3 with 30% NPK and 70% EM fertilizer application, and treatment 4 with 100% of EM fertilizer application. Plant height, number of tillers, number of leaves were measured at different interval of day after sowing (DAS), 15 DAS, 30 DAS, 45 DAS, 60 DAS, 75 DAS and 90 DAS. Also, straw biomass, root biomass, and root length were measured during the study. As result, plant height, number of tillers, number of leaves, straw biomass, root biomass, and root length showed significant difference among the treatment. Application of Bokashi fertilizer in treatment 1,2,3 and 4 there was different in plant height, number of tillers, number of leaves, straw biomass, root biomass, and root length as compared to treatment 0. Therefore, in this research shows that treatment 1 is the best concentration of effective microorganism fertilizer effectively effect on growth performance of paddy and effective microorganism will improve the plant uptake due to its ability to convert the nutrient available in soil into the convenient form for the plant.

Keyword: NPK fertilizer, Bokashi fertilizer (EM), interval of day after sowing, concentration, treatment