SUMMARY

DENA KARYANTO, Effect of Organic and Inorganic Fertilizer on Growth and Yield of Paddy Rice (Oryza sativa L.) in Cihideung Udik Village, Ciampea Subdistrict, Bogor District. Under guidance of SUWARNO and BUDI NUGROHO.

Rice fields in Indonesia today has degraded, one of which is a decrease in organic matter content. The decrease is due to the use of organic material by farmers switch to use inorganic fertilizers without offset by the addition of sufficient organic material. One way to improve soil and crop productivity and environmental sustainability is through an integrated system that combines the nutrients of organic fertilizers with inorganic fertilizer. Therefore, research is needed to determine the effect of organic fertilizer in rice plants.

The study consisted of a field experiment and analysis of soil and plants in the laboratory. Field experiment was conducted in paddy fields located in the Cihideung Udik Village, Ciampea Subdistrict, Bogor District. This experiment was a single factor experiment with 10 treatments. N, P, K (standard), plus organic fertilizer (POP), 1/3 N, P, K + POP, 2/3 N, P, K + POP, N, P, K + POP, 1/3 N, P, K POP + ½, 1/3 N, P, K + 3/4 POP, 1/3 N, P, K + 1 ¼ POP, 2/3 N, P, K + ½ POP and Control with 3 replications at arranged in Randomized Complete Block Design (RCBD). Observed variables were: plant growth (number of tillers and plant height), yield, and the elements of N-total, available P & K in the soil after harvest as well as plant content of N, P, K. Data were analyzed with analysis variance and proceeded with DMRT if the treatments were significantly different.

The results showed that treatment of inorganic fertilizer (N, P, K) significantly increased the growth and yield of rice, whereas POP fertilizer treatments did not significantly affect the growth and yield. Treatment of standard + POP significantly increase the growth and yield of rice, but the growth and yield little bit lower compared with standard. Treatment 1/3 N, P, K added POP ½, ¾ POP, POP 1, and 5/4 POP and 2/3 N, P, K added 1 POP, ½ POP and significantly influenced the growth and yield of rice, but POP fertilizer addition did not significantly improve the growth and yield. POP also has not been able to replace the shortage of fertilizer N, P, K in the treatments, although given in various doses. Thus, it can be concluded that the addition of fertilizer POP does not significantly affect plant growth and yield of rice Cihangang varieties.

Keywords: Inorganic fertilizer, Plus organic fertilizer (POP), paddy rice growth and yield