

ABSTRAK

Telah dilakukan kajian mengenai pengaruh bionutrien BDI dengan penambahan ion logam (Ca^{2+} , Mg^{2+} , Cu^{2+} , Fe^{2+} , Mn^{2+} dan Zn^{2+}) pada pertumbuhan dan hasil panen tanaman padi (*Oryza Sativa* L.) varietas Cigeulis. Ekstraksi basa digunakan untuk memperoleh ekstrak bionutrien BDI. Bionutrien BDI diaplikasikan terhadap tanaman padi dengan variasi dosis 10, 20, 25, 30, 50, 75 dan 100 mL/L dengan penambahan ion logam dengan konsentrasi yang tetap (Ca^{2+} , 1; Mg^{2+} , 2; Cu^{2+} , 1; Fe^{2+} , 2; Mn^{2+} , 1 dan Zn^{2+} , 1 ppm). Blanko digunakan terhadap tanaman dengan pemberian air dan kontrol positif digunakan dengan pemberian pupuk sintetis. Bionutrien BDI dosis 100 mL/L memberikan hasil yang positif terhadap pertumbuhan tanaman padi dengan konstanta laju pertumbuhan paling tinggi sebesar $0,1840 \text{ minggu}^{-1}$, sedangkan blanko dan kontrol memberikan konstanta laju pertumbuhan $0,1687 \text{ minggu}^{-1}$ dan $0,1690 \text{ minggu}^{-1}$. Hasil panen terberat dengan berat gabah kering adalah 42,0809 g ditunjukkan oleh dosis 10 mL/L, sedangkan blanko dan kontrol menunjukkan berat 20,3487 g dan 22,1714 g. Disimpulkan bahwa pemberian bionutrien BDI 10 mL/L dan ion logam memberikan hasil panen tanaman padi yang paling baik

Kata kunci : Bionutrien BDI, Ion logam, Padi

ABSTRACT

A research study of effect of bionutrient BDI with metal ion addition in a rice plant (*Oryza sativa L.*) has been conducted, which aims to determine the effect on growth and yield of rice plants. In this study, the method used to obtain the extract of bionutrien BDI is reflux at alkali condition. Bionutrient BDI with constant metal ion addition (Ca^{2+} , 1; Mg^{2+} , 2; Cu^{2+} , 1; Fe^{2+} , 2; Mn^{2+} , 1 dan Zn^{2+} , 1 ppm) applied as an environmentally friendly fertilizer with a variations of the dose of 10, 20, 25, 30, 50, 75 and 100 mL/L. Moreover blank group is treating by water and positive control group is treating by adding a synthetic fertilizers. The results showed that bionutrient at a dose of 100 mL/L had a positive effect on crop productivity by generating high growth rate constant of $0.0940 \text{ cm week}^{-1}$. While the blank and control group has a high growth rate constant of $0.0878 \text{ cm week}^{-1}$ and $0.0840 \text{ cm week}^{-1}$. Rice yields by adding bionutrient BDI with metal ion with a dose of 10 mL/L shows the results with the heaviest amount of grain dry weight of 42.0809 g. while the blank and control group gave the amount of dry grain weight of 20.3487 g and 22.1714 g. From these results, it can be concluded that bionutrient BDI with metal ion gave better results for the rate of growth of rice plants and rice crops.

Keywords : *Bionutrient BDI, metal ion, Rice plant (Oryza sativa L.)*