

**The Influence of Nano-Micro Fertilizer with Different Formulas towards
Micro Nutrients Uptake and Growth and Onion Crops
(*Allium ascalonicum* L.) on Inceptisol**

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ABSTRACT

Micronutrients such as Fe, Cu, Zn, and Mn are important nutrients for onion (*Allium ascalonicum* L.) growth, although they are needed in relatively small amounts. The application of nanotechnology to metallic elements Fe, Cu, Mn and Zn as micro fertilizers by insert to the matrix of alginate and zeolite with nano sizes (10^{-9} m) will allow the metal ion to released slowly in the available conditions. This study aims to determine the influence of nano-micro fertilizer with different formulas on the availability of micronutrients and the growth and onion crops. The testing of nano-micro fertilizer is done in Inceptisol soil. The onion varieties used is Bima Brebes. The research design used is Randomized Block Design (RBD) consists of 9 treatments with 3 repetitions. The treatment consists of 2 nano-micro fertilizer formulations. Formulation 1 contains Fe while, formulation 2 contains Fe, Cu, Mn, and Zn. Each has 4 different dosage levels and there is one control treatment. The research has been done in Laladon greenhouse, Bogor. Test parameters including the onion growth as well as soil and plant tissue analysis. Soil and crops analysis was conducted at Chemistry and Soil Fertility Laboratory in Soil Research Institute. According on variance, KO 2-20 showed a significantly different between treatment on nutrient uptake and leaf dry weight compared to control. While KO 2-10 showed a significantly different between the treatment of tuber uptake and tuber weight compared to control. On the parameters of plant height, wet weight, and onion dry weight, KO 2-1 was significantly different to the control. While the parameter of the amount of leaves and tillers of KO 2-5 was significantly different to the control.

Keywords: nano-micro fertilizer, Inceptisol, onion