ABSTRACT

The purpose of this experiment is to know the effect of vermicompost and inorganic fertilizer on availability of nitrogen at Alfisols Jumantono and its absorption in sweet corn (Zea mays L. saccharata). This research was done from September 2007 until January 2008 in Sub district of Jumantono, Regency of Karanganyar, soil and plant tissue analysis was done in Laboratory of Chemical and Soil Fertility, Agriculture Faculty, Sebelas Maret University Surakarta. This research represents experimental research by using Randomized Completely Block Design (RCBD) factorial with two factors. First factor was vermicompost dosage and second factor was inorganic fertilizer dosage (urea, SP36, KCl). Factor I consisted of 3 level that is: K0 (without vermicompost), K1 (vermicompost 1.5 ton.ha\(^{-1}\)), K2 (vermicompost 3 ton.ha\(^{-1}\)). Factor II consisted of 3 level that is: A0 (without inorganic fertilizer), A1 (urea 100 kg.ha\(^{-1}\), SP36 50 kg.ha\(^{-1}\), and KCl 25 kg.ha\(^{-1}\)), A2 (Urea 200 kg.ha\(^{-1}\), SP36 100 kg.ha\(^{-1}\), and KCl 50 kg.ha\(^{-1}\)). From bolt of the factor obtained 9 treatment combination and each treatment combination repeated 3 times. Statistics analysis use F Test, Kruskal Wallis, DMRT, Mood Median, and Correlation. Research result indicates that there are interaction between vermicompost and inorganic fertilizer which improving availability of nitrogen at Alfisols and its absorption in sweet corn. Highest of N available by present of vermicompost 3 ton.ha\(^{-1}\) + urea 200 kg.ha\(^{-1}\), SP36 100 kg.ha\(^{-1}\), and KCl 50 kg.ha\(^{-1}\) that is 0.095%. Highest of N Absorption and N of plant tissue that is 0.714 g/plant and 1.39% shown by present of interaction between vermicompost 3 kg.ha\(^{-1}\) and without inorganic fertilizer. Highest of total N shown by present of urea 200 kg.ha\(^{-1}\), SP36 100 kg.ha\(^{-1}\), KCl 50 kg.ha\(^{-1}\) that is 0.30%.

Keywords: Vermicompost, inorganic fertilizer, Alfisols, sweet corn, N availability, N absorption