ABSTRACT

GROWTH RESPONSE OF SWEET CORN (*Zea mays saccharata* Sturt) AS APPLIED BY THE COMBINATION OF SOLID *BIO-SLURRY* AND INORGANIC FERTILIZERS

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The use of organic fertilizer in combination with the chemical fertilizers can increase crop productivity, since micro elements contained in organic fertilizers (*bio-slurry*) has an important role in the metabolism and physiological processes of plants, as well as improve the physical structure of the soil and its fertility. Chemical fertilizers provide macro nutrients that are needed by plants.

The aims of the study were to: (1) Determine the best dose combination between solid *bio-slurry* (manure) and inorganic fertilizer on plant growth of sweet corn (*Zea mays saccharata* Sturt) Variety Bonanza and (2) Determine the response between dose combination solid *bio-slurry* and inorganic fertilizers on plant growth of sweet corn (*Zea mays saccharata* Sturt) Variety Bonanza.

This study was conducted in Bandar Lampung from January 2015 to May 2015 on an area with ultisol soil type. The treatments were arranged in a randomized block design (RBD). This study consisted of 7 treatment combinations of solid *bio-slurry* and inorganic fertilizers (Urea, SP-36 and KCl), and each treatment
was repeated 3 times. Homogeneity of variance was tested using Bartlett test and additivity of data were tested using Tukey test. If the assumptions were met, the data were analyzed by analysis of variance followed by Orthogonal Contrast test at 5% significance level.

The results showed that: (1) The best growth of sweet corn was achieved by the combination of inorganic fertilizer (urea 250 kg / ha, SP36 100 kg / ha and KCL 100 kg / ha) and bio-slurry of 2.000 kg/ha (2) The combination of organic and inorganic fertilizer had significant effect on plant height, stem diameter, wet weight stover, stover dry weight, the rate of plant growth, leaf area index, and leaf greenness of sweet corn (Zea mays saccharata Sturt) Variety Bonanza.

Keywords: sweet corn, growth, solid bio-slurry, inorganic fertilizers.