ABSTRACT

EFFECT OF MIXED ORGANIC COMPOST EXTRACT USING TWO TYPES OF EXTRACT ON SOIL CARBON MICROBIAL BIOMASS (C-MIC) OF ULTISOL SOIL

By

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Application of organic materials such as agro-industry wastes (coffee husk, cocoa pod husk, straw which had been used a mushroom media, and shrimp wastes), manure, and earthworm feces to Ultisol soil is expected to increase the crop productivity. The use of bulk compost is facing a problem. Therefore, an alternative solution is to make it liquid form. Soil carbon microbial biomass (C-mic) can be used as an indicator . The research aimed to examine the effect of mixed organic compost extract using two types of extract on soil carbon microbial biomass (C-mic) of Ultisol soil. Research was arranged in factorial, Randomized Block Design (RBD) with two treatments and three replicates. The first factor was the mixture of organic matter (O) consists of O_1 = manure + coffee husk, O_2 = manure + cocoa pod husk, O_3 = manure + straw which had been used a mushroom media, O_4 = Manure + shrimp wastes, O_5 = earthworm feces + coffee husk, O_6 = earthworm feces + cocoa pod husk, O_7 = earthworm feces + straw which had been used a mushroom media, O_8 = earthworm feces + shrimp wastes. The second factor was the extractor type consists of E_1 = Air destilata, E_2 = acetic acid 0,01N. Data obtained were analyzed by least significance difference (LSD) at 5% level. The results showed that the mixed compost extract of earthworm feces and straw which had been used a mushroom media significantly increase the microbial-C biomassa compared to another mixed compost extracts. Extraction with acetic acid was higher in the C-mik than the water only on treatment with mixed organic compost (manure and earthworm) and shrimp wastes. There was no correlation between C-mic and pH, organic C, or N-total on 30 day of incubation.

Key words : Agro-industry wastes, extracts organic compost materials, soil carbon microbial biomass (C-mic), and type of extractant.