ABSTRACT

EFFECT APPLICATION OF ORGANIC MATERIAL AND AGROINDUSTRIAL WASTE MIXTURE WHICH EXTRACTED BY AQUADES AND ACETIC ACID ON SOIL RESPIRATION

By

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Lampung province produce a lot of agroindustrial waste such as shrimp waste, rice straw as the media for mushroom, the peel of coffee and cocoa. The shrimp head is potential as the source of organic material, however it can also become pollutant if it is not handled wisely and properly. Even though the agroindustrial waste has been used by mixing the organic material as cow manure. However, it is still used in the solid from so it become less practical. In addition, the organic fertilizer has weakness which is the content of the main element in the soil is relatively low compare to the anorganic fertilizer so the dose used is higher. As the cansequence, the transportation, stockhouse or storage and workers fee increase.

One of the alternative way used in the use of organic materials and agroindustrial waste is in the solid form. It is done by marking he solid from into the extract of liquid. So it can be as a nutrition for a plants without destroying/breaking the biological and physical from of the soil. In addition it is also considered more practical in the application. To know the effect of the mixture extract of organic material and agroindustrial waste towards the soil, the extract can be also applied into the soil as the sourse of main element for soil and place on activated soil microorganism.

The purpose this research was to examine the effect of mixed organic material extract and agroindustrial waste with aquades and acetic acid extractor on soil respiration. This research is designed factorially in the from of group design with 3 times respeatition. The main factor is organic material which is O_1 = cow

manure + coffee peel, O_2 = cow manure + cocoa peel, O_3 = cow manure + straw mushroom, O_4 = cow manure + shrimp head, O_5 = earthworm cast + coffee peel, O_6 = earthworm cast + cocoa peel, O_7 = earthworm cast + straw mushroom, O_8 = earthworm cast + shrimp head, E_1 = Aquades extract, E_2 = Asetat extract. The data obtained were tested its homogenity using Bartlett's test and its additivity were tested using Tukey's test. Furthermore tested by Least Significant Difference (LSD) of 5% to detect the difference in treatment and also performed a correlation test on 30 day between the main variable of pH, C-organic and total soil N in soil respiration.

The research shows that the mixture on haste as the mushroom media with cow manure which is extracted by aquades is increasing soil respiration. Meanwhile, the soil respiration used aquades is higher that the respiration used. There is correlation between soil respiration with pH, C-organic, N-total soil, and there is an interaction between organic material, agroindustrial waste and extract towards the soil respiration.

Key word : extract, kinds of extract, soil respiration, organic material.