ABSTRACT

Empty oil palm bunches widely used as raw materials for the organic fertilizer because it can be obtained in large quantities and cheaply. Empty oil palm bunches can not immediately break down into compost. Empty oil palm bunches are still in the form of a complex element. To be converted into more simple elements, empty oil palm bunches (tkks) should be degraded first. Natural degradation process takes a very long time, for it used mushroom (Volvariella Volvacea) to degrade lignin and cellulose content. In addition, oil palm empty bunches (tkks) treated with em-4 which contains microorganisms that can help decomposition and decomposition to speed up composting.

The purpose of this research is to study the utilization of empty oil palm bunches as residue of Mushrooms (Volvariella volvacea) cultivation is as an organic fertilizer with the addition of aerobic activator “effective microorganism” (EM-4). By operating in a batch in a Rotary Drum Composter by 0.41 m³/day/kg aeration rate in a laboratory scale, the pH is maintained between 6.5 - 7.5 for more than 15 days or until the compost maturity (20 days). The variables used is the ratio between empty oil palm bunches (TKKS) and empty oil palm bunches mushroom remaining media (TKSJ) = 1:0, 1:3 and 1:5 w/w. The oil palm empty bunches remaining mushroom media (TKSJ) which is used as composting materials obtained from the media using 5% and 10% w/w mushroom seeds. The analysis conducted included the level of C, N, P, K, pH, temperature and moisture content. From the results of analysis carried out showed that the decrease in the highest levels of C 2.22% in the variable 10% w/w seed mushroom TKKS ratio: 1:5 and TKSJ = EM-4 addition of 10 ml. The increase in levels of N, P and K are the highest achieved in the variable 10% w/w seeds with a ratio of mushroom TKKS: TKSJ = 1:5 and the addition of EM-4 for 10 ml which increased by 48.84% N, 44.16% for P and 64.15% for K.

Keyword: Compost, Empty Oil Palm Bunches (TKKS), Empty Oil Palm Bunches Remaining Mushroom Media (TKSJ), Volvariella Volvacea, Effective Microorganism (EM-4).
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