Characterization of Selected Lipolytic Bacteria

 from Domestic Waste Composting Process

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**Abstract.** Compost is the result of the partial decomposition of a mixture of organic materials which is accelerated by a population of various microbes under environmental and aerobic or anaerobic conditions. The microbes present during the composting process differ in each phase. The purpose of this study was to characterize lipolytic bacterial isolates at each phase of domestic waste composting. The methods used include isolation and screening of lipolytic bacteria from each composting phase using Rhodamine B, biochemical characteristics test of selected isolates, lipolytic activity test of selected bacteria by titration method. The results showed that there were 59 isolates in the early mesophilic phase, 32 isolates in the thermophilic phase and 27 isolates in the late mesophilic phase which had lipolytic activity marked with an orange zone around the colony. The results on selected isolates and different biochemical characters, obtained 8 lipolytic isolates to determined their growth curves and lipolytic activity, namely LKMA3, LKMD1, LKMG1, LKTB1, LKTD4, LKTF2, LKMC2 and LKMD4 isolates. The results of determining the specific activity of the selected isolates showed that there were 3 isolates that had relatively high specific activity, namely LKMA3 isolates of 0.4689 U / mg, oLKMG1 isolates of 0.4227 U / mg and LKTD4 isolates of 0.4598 U / mg. Based on these results it can be concluded that there are microbial variations in each composting phase and each microbe has a different ability to produce lipolytic activity.

***Kata kunci*** *: lipolytic bacteria, domestic waste, compost*