

# DEVELOPMENT OF EFFECTIVE MICROORGANISMS (EM) CULTURE FOR THE FERMENTATION OF KITCHEN WASTE

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## ABSTRACT

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The Effective Microorganisms (EM) were developed using instant yeast (Kijang) and *Lactobacillus casei* ATCC 393 in the presence of calcium carbonate ( $\text{CaCO}_3$ ). The EM cultures were then cultivated into the wheat bran containing blackstrap molasses and deionized water for two to three weeks. The pH of the fermented wheat bran was measured at the 14<sup>th</sup> day and 21<sup>st</sup> days after the initial cultivation of the EM. The lactic acid production by *L. casei* caused the decrease in pH value of the fermented wheat bran. However, the pH value obtained at the end of 14-days and 21-days of fermentation was still higher at pH of 5 to 6 than it should be pH of 3.9 or preferably 3.7. Hence, the fermented wheat bran cannot be used as the Bokashi powder to ferment the kitchen waste. One possible reason for the slow drop of the pH is the slower growth rate of *L. casei* ATCC 393. Besides, the anoxygenic phototrophic bacteria which supposedly in the EM group being excluded for the making of Bokashi powder. This is because of the cost of the phototrophs exceeded the budget given, also, its cultivation needs very precise condition.