

**THE EFFECT OF KAFFIR LIME LEAVES EXTRACT ON
THE pH AND GROWTH OF *Lactobacillus acidophilus***

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ABSTRACT

THE EFFECT OF KAFFIR LIME LEAVES EXTRACT ON THE pH AND GROWTH OF *Lactobacillus acidophilus*.

This study was done to determine the most favourable pH for the viability of the *Lactobacillus acidophilus* and to determine the effect and most suitable volume of Kaffir Lime leaves extract for the growth of the bacteria. The Kaffir Lime Leaves was taken at Kuala Terengganu and the leaves were centrifuged to obtain the extract. Fresh milk, distilled water and Kaffir Lime leaves extract was added together for different samples with different volumes. The time taken for the fermentation was done for 12 hours and every 3 hours, the pH of the samples was taken. Plate count method was done and the result was recorded. For further conformation, the colony was observed under microscope by using gram staining to identify the morphology of the bacteria. Results show that the most suitable pH for the growth of *Lactobacillus acidophilus* is 4.42 to 4.43. *Lactobacillus acidophilus* growth the best at sample that contain 9 ml extract with 0 distilled water. For the samples that contain 0 ml to 6 ml extract of Kaffir Lime leaves, the growth of *Lactobacillus acidophilus* was growing linearly. However, the *Lactobacillus acidophilus* colony starts to decrease for samples contain 9 ml extract with addition of 3 ml, 6 ml, and 9 ml distilled water. This is due to over accumulation of lactic acid which not enhances the growth of bacteria. Then, Gram stain was done to identify the morphology of the *Lactobacillus acidophilus*. Under the microscope, purple colour, and vary size of *Lactobacillus acidophilus* can be observed.