

PENGEMBANGAN MEDIA HALAL BERBASIS EKSTRAK KHAMIR UNTUK PERTUMBUHAN

Lactiplantibacillus plantarum subsp. *plantarum* Dad-13

ABSTRAK

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Penelitian ini bertujuan untuk mempelajari pengaruh penambahan ekstrak khamir dengan variasi konsentrasi yang berbeda untuk pertumbuhan *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 sebagai usaha dalam pengembangan media pertumbuhan berbasis ekstrak khamir. Pada penelitian ini digunakan lima variasi konsentrasi ekstrak khamir 0,01%; 0,05%; 0,1%; 0,5%; dan 1%. Pada setiap basis konsentrasi ekstrak khamir akan ditambahkan pepton daging bubuk dengan konsentrasi 0%; 0,01%; 0,5%; dan 1%. Kultur *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 akan ditumbuhkan pada media pertumbuhan dengan berbagai variasi komposisi pada suhu 30°C selama 24 jam. Pertumbuhan sel dan penurunan pH media pertumbuhan diukur pada jam ke-12 serta jam ke-24 setelah inkubasi. Berdasarkan hasil penelitian, diketahui bahwa peningkatan konsentrasi ekstrak khamir yang dikombinasikan dengan penambahan variasi konsentrasi pepton daging bubuk dapat meningkatkan pertumbuhan sel *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13. Tanpa penambahan pepton pada media pertumbuhan dengan basis ekstrak khamir 1% bisa menghasilkan jumlah sel sebesar $2,19 \times 10^{10}$ CFU/mL dengan kenaikan sel sebesar 2,96 log CFU/mL setelah inkubasi 24 jam serta penurunan pH media sebesar 3,98.

Kata kunci: bakteri asam laktat, *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13, pengembangan media, ekstrak khamir

**DEVELOPMENT OF HALAL MEDIUM
BASED ON YEAST EXTRACT FOR
Lactiplantibacillus plantarum subsp. *plantarum* Dad-13 GROWTH**

ABSTRACT

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This research aims to study the effect of adding yeast extract with a variety of different concentrations for the growth of *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 as an effort to develop growth media based on yeast extract. In this study, five variations of yeast extract concentrations were used, including 0,01%; 0,05%; 0,1%; 0,5%; and 1%. At each base concentration of yeast extract will be added powdered meat peptone with a concentration of 0%; 0,01%; 0,5%; and 1%. Culture of *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 will be grown in growth media with various composition variations at a temperature of 30°C for 24 hours. Cell growth and decrease of pH in the medium growth were measured at the 12th and 24th hours after incubation. Based on the research results, it is known that increasing the concentration of yeast extract combined with adding variations in the concentration of powdered meat peptone can increase the cell growth of *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13. Without the addition of peptone in the growth medium with 1% yeast extract, it can produce a cell number of $2,19 \times 10^{10}$ CFU/mL with an increase in cells of 2.96 log CFU/mL and a decrease in pH by 3.98 after 24 hours of incubation.

Keywords: lactic acid bacteria, *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13, medium development, yeast extract