

## INTISARI

### PENGARUH PENAMBAHAN NaCl TERHADAP LAJU PERTUMBUHAN *Morganella morganii* TK7 DAN PEMBENTUKAN HISTAMIN PADA MEDIUM *Tuna Fish Infusion Broth*

Histamin merupakan senyawa biogenik amin penyebab keracunan yang dihasilkan dari proses dekarboksilasi histidin bebas oleh bakteri penghasil *L-Histidine Decarboxylase* (HDC). Penelitian ini bertujuan untuk mengetahui pengaruh konsentrasi NaCl terhadap laju pertumbuhan *Morganella morganii* TK7 pada pembentukan histamin *M. morganii* TK7 yang diinokulasi dalam media pertumbuhan cair *Tuna Fish Infusion Broth* (TFIB) dan diinkubasi suhu 30°C dalam inkubator. Konsentrasi NaCl yang digunakan adalah 0%, 3%, 6%, 9%, 12% dengan waktu inkubasi 0, 2 jam, 4 jam, 6 jam, dan 24 jam. Pertumbuhan bakteri diuji melalui metode *Total Plate Count* (TPC). Pertumbuhan log CFU/mL dan waktu inkubasi diplot dalam program DMFit. Pembentukan kadar histamin diuji melalui metode Kromatografi Lapis Tipis (TLC) dan aplikasi ImageJ. Berdasarkan hasil penelitian penambahan NaCl memberikan pengaruh nyata terhadap laju pertumbuhan bakteri dan pembentukan histamin oleh *M. Morganii* TK7. Laju Pertumbuhan tertinggi *M. morganii* TK7 terjadi pada NaCl 0% dan 3% dengan hasil 0,1009 logCFU/jam dan 0,1221 logCFU/jam. Laju pertumbuhan semakin menurun pada NaCl 6% sebesar 0,0791 logCFU/jam; NaCl 9% sebesar 0,0098 logCFU/jam; dan NaCl 12% sebesar -0,0201. *M. morganii* TK7 membentuk histamin pada NaCl 0% sebesar sebesar 225.2ppm pada jam ke 6 inkubasi dan 312.2ppm pada jam ke 24 inkubasi, NaCl 3% sebesar 432.2ppm, dan NaCl 6% sebesar 100.2ppm setelah inkubasi 24 jam.

Kata kunci : garam, histamin, laju pertumbuhan, *Morganella morganii* TK7

## **ABSTRACT**

### **EFFECT OF NaCl ADDITION ON GROWTH RATE OF *Morganella morganii* TK7 AND HISTAMIN FORMATION IN *Tuna Fish Infusion Broth* MEDIUM**

Histamine is a biogenic amine that causes poisoning resulting from the decarboxylation of free histidine by L-Histidine Decarboxylase (HDC) producing bacteria. This study aimed to determine the effect of NaCl concentration on the growth rate of *Morganella morganii* TK7 on the formation of histamine *M. morganii* TK7 which was inoculated in *Tuna Fish Infusion Broth* (TFIB) liquid growth medium and incubated at 30°C in an incubator. The concentrations of NaCl used were 0%, 3%, 6%, 9%, 12% with incubation times of 0, 2 hours, 4 hours, 6 hours, and 24 hours. Bacterial growth was tested using the Total Plate Count (TPC) method. Log CFU/mL growth and incubation time were plotted in the DMFit program. The formation of histamine levels was tested using Thin Layer Chromatography (TLC) and ImageJ application. Based on the results of the study, the addition of NaCl significantly affected the rate of bacterial growth and the formation of histamine by *M. Morganii* TK7. The highest growth rate of *M. morganii* TK7 occurred at 0% and 3% NaCl with the results of 0.1009 logCFU/hour and 0.1221 logCFU/hour respectively. The growth rate at 6% NaCl was 0.0791 logCFU/hour; 9% NaCl was 0.0098 logCFU/hour; and 12% NaCl was -0.0201. *M. morganii* TK7 formed histamine at 0% NaCl of 225.2 ppm after 6 hours incubation and 312.2 ppm after 24 hours incubation, meanwhile at 3% NaCl was 432.2 ppm, and 6% NaCl was 100.2 ppm after 24 hours incubation.

**Keywords:** growth rate, histamine, *Morganella morganii* TK7, salt