KARAKTERISTIK KIMIA, FISIK, DAN VIABILITAS SEL KEJU CHEDDAR PROBIOTIK DENGAN KULTUR STARTER LOKAL *Lactiplantibacillus plantarum subsp. plantarum* Dad-13 DAN *Streptococcus thermophilus* Dad-11

ABSTRAK

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Adanya isolat bakteri probiotik *Lactiplantibacillus plantarum* Dad-13 dan isolat bakteri *Streptococcus thermophilus* Dad-11 diduga mampu menjadi starter lokal keju cheddar probiotik. Tujuan dari penelitian ini adalah membuat keju cheddar probiotik menggunakan starter probiotik lokal *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 dan *Streptococcus thermophilus* Dad-11, mempelajari karakteristik kimia, fisik, dan viabilitas sel probiotiknya, serta membandingkannya dengan keju cheddar starter impor MA4002 *Lactococcus lactis* subsp. *lactis*.

Bahan yang dibutuhkan untuk pembuatan keju cheddar ialah susu sapi organik, starter lokal *L. plantarum* Dad-13 & *S. thermophilus* Dad-11 dan starter impor MA4002, rennet, lipase, dan garam. Dilakukan pengujian pH selama pembuatan keju cheddar, *yield* produk, uji proksimat setelah pemeraman, dan uji viabilitas sel probiotik selama pemeraman. Sebagai pembanding, digunakan keju cheddar produksi lokal PT Mazaraat Lokanatura menggunakan starter impor MA4002 *L. lactis*.

Hasil penelitian menunjukkan produk keju cheddar probiotik menggunakan kultur starter lokal *L. plantarum* Dad-13 dan *S. thermophilus* Dad-11 memiliki karakteristik kimia dan fisik menyerupai keju cheddar menggunakan starter impor MA4002 *L. lactis*, viabilitas sel probiotik keju cheddar menggunakan *L. plantarum* Dad-13 dan *S. thermophilus* Dad-11 memiliki hasil yang stabil dan masuk ke dalam kategori pangan probiotik.

Kata kunci: keju cheddar, probiotik, kultur starter, *Lactiplantibacillus plantarum* Dad-13, *Streptococcus thermophilus* Dad-11.

CHEMICAL AND PHYSICAL CHARACTERISTICS, AND CELL VIABILITY OF PROBIOTIC CHEDDAR CHEESE WITH LOCAL STARTER CULTURE *Lactiplantibacillus plantarum subsp. plantarum* Dad-13 AND *Streptococcus thermophilus* Dad-11

ABSTRACT

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Lactiplantibacillus plantarum subsp. *plantarum* Dad-13 probiotic bacterium isolates and *Streptococcus thermophilus* Dad-11 bacterium isolate has been predicted to be able to be a local starter culture for probiotic cheddar cheese. The aim of this study is to make probiotic cheddar cheese using local starter culture *L. plantarum* Dad-13 and *S. thermophilus* Dad-11, learn its chemical and physical characteristics and probiotic cell viability, and compare them to the cheddar cheese made with imported started culture MA4002 *Lactococcus lactis* subsp. *lactis*. used by Mazaraat Lokanatura local company.

Materials needed to make cheddar cheese are organic cow milk, local starter culture *Lactiplantibacillus plantarum* Dad-13 and *Streptococcus thermophilus* Dad-11, imported started culture MA4002 *Lactococcus lactis* subsp. *lactis*. rennet, lipase, and salt. pH scale in cheddar cheese making, yield count, proximate analysis after aging process, and probiotic cell viability in aging process were inspected.

Results showed that the chemical and physical characteristics of probiotic cheddar cheese made with local starter culture *L. plantarum* Dad-13 and *S. thermophilus* are similar to the results obtained from cheddar cheese made with imported culture MA4002. Meanwhile, probiotic cell viability (CFU/g) results were stable from time to time and could be labeled as a probiotic product.

Keywords: cheddar cheese, probiotics, starter culture, *Lactiplantibacillus plantarum* Dad-13, *Streptococcus thermophilus* Dad-11.