

VIABILITAS BAKTERI ASAM LAKTAT DAN PROBIOTIK SERTA KARAKTERISTIK KIMIA SELAMA PEMERAMAN KEJU *CHEDDAR* PROBIOTIK DENGAN VARIASI KADAR GARAM

ABSTRAK

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Pada penelitian ini dilakukan pengembangan keju cheddar probiotik dengan starter lokal *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 dan *Streptococcus thermophilus* Dad-11 dengan adanya variasi kadar garam 1 persen dan 2 persen serta bertujuan untuk mengetahui pengaruhnya terhadap viabilitas bakteri asam laktat serta probiotik, karakteristik kimia dan fisik pada keju selama pemeraman 8 minggu. Keju cheddar probiotik dibuat menggunakan susu sapi, kultur starter lokal, enzim rennet, lipase dan garam. Pada sampel dilakukan pengujian viabilitas bakteri asam laktat serta probiotik (*dilution and plating*), pH (pH meter), lemak (soxhlet), protein (kjeldahl), karbohidrat (*by-difference*), abu (*dry-ashing*) dan pengamatan fisik selama pemeraman 8 minggu. Hasil dari penelitian ini menunjukkan dengan adanya variasi kadar garam tidak mempengaruhi secara signifikan terhadap viabilitas bakteri asam laktat serta probiotik, karakteristik kimia dan fisik pada keju. Keju dengan kadar garam 1 persen dan 2 persen selama pemeraman 8 minggu memiliki viabilitas bakteri asam laktat stabil dan serupa pada 8 Log CFU/gram. Viabilitas sel probiotik stabil dan serupa pada 7-8 Log CFU/gram. Karakteristik kimia keju dengan garam 1 persen sebagai berikut : Kadar lemak $24,76 \pm 0,45$; kadar protein $19,30 \pm 0,12$; kadar karbohidrat $8,41 \pm 0,01$; kadar abu $2,62 \pm 0,00$. Kedua keju memiliki karakteristik kimia yang serupa kecuali pada kadar abu. Dimana kadar abu pada keju dengan garam 2 persen sebesar $3,38 \pm 0,05$. Namun kedua variasi keju masih sesuai dengan persyaratan yang ada.

Kata Kunci : *Keju Cheddar, Probiotik, Garam, Bakteri Asam Laktat, Karakteristik kimia, pemeraman*

VIABILITIES OF LACTIC ACID BACTERIA AND PROBIOTICS AND CHEMICAL CHARACTERISTICS DURING AGING OF PROBIOTIC CHEDDAR CHEESE WITH VARIATIONS SALT CONTENT

ABSTRACT

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This research, probiotic cheddar cheese was developed using local starter *Lactiplantibacillus plantarum* subsp. *plantarum* Dad-13 and *Streptococcus thermophilus* Dad-11 with variations in salt content of 1 and 2 percent and aims to determine their effect on lactic acid bacteria and probiotics viabilities, chemical and physical characteristics of cheese during 8 weeks aging. Probiotic cheddar cheese is made using cow's milk, local starter culture, rennet enzymes, lipase and salt. The samples were tested for viabilities of lactic acid bacteria and probiotics (dilution and plating), pH (pH meters), fat (soxhlet), protein (kjeldahl), carbohydrates (by-difference), ash (dry-ashing) and physical characteristics during 8 weeks aging. The results of this research show that variations in salt levels do not significantly affect the viability of lactic acid bacteria and probiotics, the chemical and physical characteristics of cheese. Cheese with 1 and 2 percent salt content, during 8 weeks of aging had stable and similar lactic acid bacteria viability at 8 Log CFU/gram. Probiotic cell viability was stable and similar at 7-8 Log CFU/gram. The chemical characteristics of cheese with 1 percent salt are as follows: Fat content 24.76 ± 0.45 ; protein content 19.30 ± 0.12 ; carbohydrate content 8.41 ± 0.01 ; ash content 2.62 ± 0.00 . Both cheeses have similar chemical characteristics except for the ash content. Where the ash content in cheese with 2 percent salt is 3.38 ± 0.05 . However, both cheese variations still comply with existing requirements.

Keywords: *Cheddar Cheese, Probiotics, Salt, Lactic Acid Bacteria, Chemical characteristics, aging*