

## KUALITAS KEJU PERAM DENGAN STARTER KOMBINASI *Lactobacillus plantarum* Kita-3 dan *Lacticaseibacillus paracasei* LVC

Yosafat Suryo Herdian  
19/443057/PT/08189

### INTISARI

Inovasi pembuatan keju terus dilakukan dengan memodifikasi kultur starter dengan starter lokal. Starter *Lactobacillus plantarum* Kita-3 dan *Lacticaseibacillus paracasei* LVC adalah bakteri indigenous dari keju halloumi dan *bee bread* yang akan digunakan sebagai kandidat bakteri asam laktat dan probiotik. Penelitian ini bertujuan untuk mengetahui kualitas fisiko-kimia, mikrobiologis dan sensoris keju dengan starter *L. plantarum* Kita-3 dan *Lacticaseibacillus paracasei* LVC selama pemeraman 14 hari. Pengujian yang dilakukan adalah total bakteri asam laktat (BAL), pH, Keasaman, rendemen *curd*, *total solid*, *free fatty acid* (FFA), tekstur dan sensoris. Susu dipanaskan dengan suhu hingga 50°C, kemudian didinginkan hingga mencapai suhu 37°C. Susu ditambahkan kultur bakteri dengan variasi 4% *L. plantarum* Kita-3, 4% *Lacticaseibacillus paracasei* LVC, 4% starter kombinasi (2% *L. plantarum* Kita-3 + 2% *Lacticaseibacillus paracasei* LVC). Susu yang telah diberi starter lalu ditambahkan dengan enzim rennet. *Curd* ditangani sehingga terbentuk keju. Keju kemudian diperam dan diamati kualitasnya pada hari 0, 7, dan 14. Analisis data penelitian menggunakan analisis variansi pola faktorial 3x3 untuk uji kualitas fisiko kimia serta analisis *kruskal walis* untuk data sensoris. Hasil penelitian menunjukkan bahwa keju dengan starter *L. plantarum* Kita-3 unggul intensitas rasa *milky*. Hasil penelitian menunjukkan bahwa keju dengan starter *Lacticaseibacillus paracasei* LVC signifikan unggul kualitas *hardness*, *springiness*, *chewiness*, intensitas rasa *buttery creamy* dan penilaian *overall acceptability*. Keju dengan starter kombinasi unggul kualitas total BAL, FFA dan *total solid*. Perlakuan penyimpanan 0, 7 hari tidak menghasilkan kualitas keju terbaik berdasarkan semua parameter. Pemeraman 14 hari signifikan unggul terhadap nilai total BAL, pH, keasaman, FFA, *total solid*, *hardness* dan *chewiness*. Kombinasi Starter keju dapat meningkatkan total BAL, asam lemak bebas (FFA), *total solid*, kekerasan keju, dan tidak mempengaruhi sifat sensoris atau kesukaan.

**Kata kunci:** Kualitas keju, *Lactobacillus plantarum* Kita-3, *Lacticaseibacillus paracasei* LVC

## QUALITY of RIPENED CHEESE WITH STARTER COMBINATION *Lactobacillus plantarum* Kita-3 and *Lacticaseibacillus paracasei* LVC

Yosafat Suryo Herdian

19/443057/PT/08189

### ABSTRACT

Cheese making innovation continues to be carried out by modifying the starter culture with local starters. *Lactobacillus plantarum* Kita-3 and *Lacticaseibacillus paracasei* LVC are indigenous bacteria from halloumi cheese and bee bread that will be used as candidates for lactic acid bacteria and probiotics. This study aimed to determine the physico-chemical, microbiological and sensory quality of cheese with *L. plantarum* Kita-3 and *Lacticaseibacillus paracasei* LVC starter during 14 days of aging. The tests conducted were total lactic acid bacteria (LAB), pH, acidity, curd yield, total solid, free fatty acid (FFA), texture and sensory. Milk was heated to 50°C, then cooled to 37°C. Milk was added to bacterial cultures with variations of 4% *L. plantarum* Kita-3, 4% *Lacticaseibacillus paracasei* LVC, 4% combination starter (2% *L. plantarum* Kita-3 + 2% *Lacticaseibacillus paracasei* LVC). Milk that has been given a starter is then added with rennet enzyme. Curd was handled to form cheese. The cheese was then aged and observed for quality on days 0, 7, and 14. The data analysis used a 3x3 factorial pattern analysis of variance for the chemical physics quality test and Kruskal Wallis analysis for the sensory data. The results showed that cheese with *L. plantarum* Kita-3 starter was superior in milky flavor intensity. The results showed that cheese with *Lacticaseibacillus paracasei* LVC starter significantly superior the quality of hardness, springiness, chewiness, buttery creamy flavor intensity and overall acceptability. Cheese with combination starter was superior in the quality of total LAB, FFA and total solid. Storage treatment of 0, 7 days did not produce the best cheese quality based on all parameters. 14 days of storage was significantly superior to total LAB, pH, acidity, FFA, total solid, hardness and chewiness. The combination of cheese starters can increase total LAB, free fatty acids (FFA), total solid, cheese hardness, and does not affect sensory properties or liking.

**Keywords:** Cheese quality, *Lactobacillus plantarum* Kita-3, *Lacticaseibacillus paracasei* LVC.