

IDENTIFIKASI MOLEKULER *Staphylococcal enterotoxin A* DAN *B* DARI *Staphylococcus aureus* ASAL SUSU PASTEURISASI

Oleh :

Riza Resita
20/460987/SV/18068

INTISARI

Yogyakarta merupakan salah satu wilayah penghasil susu sapi terbesar di Indonesia dengan produksi dan konsumsi susu dapat meningkat setiap tahunnya. Keamanan pangan yaitu produksi susu menjadi aspek penting agar masyarakat terjamin mengkonsumsi susu yang aman, sehat, utuh, dan halal (ASUH) serta bebas dari toksin. Proyek Akhir ini bertujuan untuk mengetahui distribusi *Staphylococcal enterotoksin* dari isolat *Staphylococcus aureus* (*S. aureus*) asal susu sapi yang diperjualbelikan secara tradisional di wilayah Yogyakarta menggunakan metode deteksi *Polymerase Chain Reaction* (PCR). Metode yang dilakukan adalah isolasi DNA bakteri dari 8 sampel susu sapi pasteurisasi yang terduga *S. aureus* pada media *Mannitol Salt Agar*, ekstraksi dengan kit ekstraksi DNA, identifikasi isolat terduga *S. aureus* dengan amplifikasi gen target 23S rRNA, identifikasi *mecA*, serta identifikasi *Staphylococcal enterotoksin A* (SEA) dan *B* (SEB). Hasil PCR menunjukkan sebanyak 8 isolat susu sapi pasteurisasi terduga mengandung *S. aureus* positif identifikasi *S. aureus* yang dilakukan pengujian secara molekuler dan sebelumnya telah dilakukan pengujian mikrobiologi (uji katalase, koagulase, dan pengecatan gram), negatif identifikasi *mecA*, serta 2 sampel isolat terduga mengandung *S. aureus* positif identifikasi SEA dan SEB. Disimpulkan bahwa diketahui 8 isolat susu sapi pasteurisasi terduga mengandung *S. aureus* positif *S. aureus* (100%), *mecA* (0%), serta SEA dan SEB (25%). *Staphylococcal enterotoksin* telah terdeteksi dari *S. aureus* asal susu sapi pasteurisasi. Potensi keracunan makanan asal susu sapi pasteurisasi dapat menimbulkan penyakit sehingga perlu menjadi perhatian.

Kata Kunci : susu sapi pasteurisasi; PCR; *Staphylococcus aureus*; *Staphylococcal enterotoxin*.

MOLECULAR IDENTIFICATION OF *Staphylococcal enterotoxin A* AND *B* FROM *Staphylococcus aureus* ORIGIN OF PASTEURIZED MILK

By:

Riza Resita
20/460987/SV/18068

ABSTRACT

Yogyakarta is one of the largest cow's milk producing regions in Indonesia, with milk production and consumption increasing every year. Food safety, namely milk production, is an important aspect so that people are guaranteed to consume safe, healthy, whole, and halal milk (ASUH) and free from toxins. This final project aims to determine the distribution of *Staphylococcal enterotoxin* from *Staphylococcus aureus* (*S. aureus*) isolates from cow's milk, which are traded traditionally in the Yogyakarta area using the *Polymerase Chain Reaction* (PCR) detection method. The methods used were isolation of bacterial DNA from 8 samples of pasteurized cow's milk suspected of *S. aureus* on *Mannitol Salt Agar* media, extraction with a DNA extraction kit, identification of isolates suspected of *S. aureus* by amplification of the target gene for 23S rRNA, identification of *mecA*, and identification of *Staphylococcal enterotoxins A* (SEA) and *B* (SEB). The PCR results showed as many as 8 isolates of pasteurized cow's milk suspected of containing *S. aureus* positive identification of *S. aureus* which were carried out by molecular testing, and previously carried out microbiological testing (catalase test, coagulation, and gram staining), negative identification of *mecA*, and 2 samples of suspected isolates. Containing *S. aureus* positive identification of SEA and SEB. It was concluded that 8 isolates of pasteurized cow's milk were suspected to contain *S. aureus* was positive for *S. aureus* (100%), *mecA* (0%), and SEA and SEB (25%). *Staphylococcal enterotoxins* have been detected from *S. aureus* from pasteurized cow's milk. The potential for food poisoning pasteurized cow's milk can cause disease, so it needs to be a concern.

Keywords: pasteurized cow's milk; PCR; *Staphylococcus aureus*; *Staphylococcal enterotoxin*.