ABSTRACTS

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Polymerase Chain Reaction Detection of Coagulase Gene of Mastitic *Staphylococcus aureus* in Ontario, Canada

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Staphylococcus aureus is one of the most common agents causing contagious mastitis in dairy cows. For the identification of *Staphylococcus aureus* isolates, coagulase production is the principal criterion used by a microbiology laboratory. Recently, the gene for coagulase production in *Staphylococcus aureus* has been identified and variation within it detected. A polymerase chain reaction (PCR) technique was applied for the detection of coagulase gene of mastitic *Staphylococcus aureus* in Ontario, Canada. The gene was amplified using a pair of primers (5′-CGA GAC CAA GAT TCA ACA AG-3′ / 5′-ATG TCG CAG TAC CAT CTG-3′). The expected result is a 402-bp PCR product. Sixty isolates of *Staphylococcus aureus* (59 isolates from dairy herds and an ATCC strain [ATCC 29213]) were tested. PCR product of five different sizes was obtained. A single PCR product of varying size (250 to 650 bp) was found after the amplification of the 60 DNA samples. The frequency of occurrence of the different banding patterns ranged from 12.73% to 27.27% among the isolates. In the sensitivity tests, the detection limit of 11 CFU of *Staphylococcus aureus* was obtained when tested with DNA from the cultured cells. The direct detection of *Staphylococcus aureus* coagulase gene in raw milk samples was also examined. Sixty six milk samples collected from individual cows with mastitis of different herds were tested with the primer set without isolating of bacteria. The single PCR product of five different banding profiles was obtained from 48 milk samples. The remainding 18 samples were negative by PCR and by the standard culture technique for the detection of *Staphylococcus aureus*. These results will be useful for subtyping strains and subsequent epidemiology studies of *Staphylococcus aureus* associated with dairy cow mastitis.