

Microbiological quality and the impact of hygienic practices on the raw milk obtained from the small-scale dairy farmers in Sabah, Malaysia

ABSTRACT

The aim of this study was to investigate the raw milk hygiene and quality among the dairy farmers within Sabah area. A total of 150 raw milk samples were obtained from different dairy farmers as well as at the milk collecting center (MCC) of the Sebrang Station, Keningau. The results revealed that the bacteriology quality of raw milk was poor as the total plate count was more than 107 CFU/ml. Both the coliform (2.96 – 4.03 log CFU/ml) and Staphylococcus counts (2.73 – 3.55 log CFU/ml) were high in all tested samples. The microbial load of the raw milk increased ($p < 0.05$) upon reaching MCC. A total of 47 samples were tested positive for the presence of E.coli while the Staphylococcus aureus was the second prevalence pathogenic bacteria (8.3-41.6%) found in this study. Only 17 raw milks were found positive with the presence of Salmonella spp, but none of the pathogenic species of E.coli O157:H7 were detected in this study. Stepwise tracer study revealed that personal hygiene of farmers and unhygienic utensils used during milking process contributed most to the bacteriology quality of raw milk. A significant reduction on microbial count was observed after the hygienic practices were introduced to the dairy farmers.