THE EFFECTS OF YOMEISHU ON GROWTH OF PROBIOTIC AND PATHOGENIC BACTERIA

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2009
ABSTRACT

Yomeishu, a traditional herbal liqueur was long being consumed among Asian to maintain good health. This study was aimed to investigate the effect of Yomeishu in different concentration (0%, 10%, 20% and 40% v/v) on growth of Lactobacillus casei, Staphylococcus aureus, Escherichia coli and Salmonella spp. at different incubation periods (3 and 6 hours). The viabilities of bacteria were determined using total plate count method and expressed as log CFU/mL. The result showed that viabilities of four tested bacteria in samples of all concentration (0%, 10%, 20% and 40% v/v) were lower than that of their control at all incubation periods except for salmonella spp.. Promotion effect on growth of salmonella spp. was observed in samples with 10% and 20% Yomeishu (v/v). Growth of L. casei showed highest inhibition toward Yomeishu of all concentration but did not increased with increased Yomeishu concentration (v/v). Inhibition effect of S. aureus, E. coli and salmonella spp. increased with increased Yomeishu concentration in both incubation periods. Growth of E. coli in 40% Yomeishu (v/v) was totally inhibited at all incubation periods. No colony was observed for E. coli in 40% Yomeishu (v/v) at all incubation periods. Growth of S. aureus and salmonella spp. in 10%, 20% and 40% Yomeishu (v/v) showed greatest inhibition after six hour incubation. However, only growth of S. aureus and salmonella spp. after six hour incubation in samples with 10% and 20% of Yomeishu (v/v) showed significant different (p<0.05) to that of samples with 40% of Yomeishu (v/v). There was no significant different (p>0.05) between samples with 10%, 20% and 40% of Yomeishu for growth of all four tested bacteria at incubation of three hours. Among the bacteria, growth of E. coli showed greatest inhibition toward ethanol followed by L. casei, S. aureus and Salmonella spp. at all incubation periods. Tolerance of L. casei and S. aureus toward ethanol decreased with incubation times. Only Salmonella spp. became more tolerance toward ethanol after six hour incubation.