

**THE EFFECT OF DIFFERENT
CONCENTRATIONS OF BOILED
YOMEISHU ON THE GROWTH OF
PROBIOTIC AND PATHOGENIC BACTERIA**

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ABSTRACT

The main aim of this study was to investigate the effect of different concentrations of boiled Yomeishu (0%, 10%, 20% and 40% v/v) on growth of probiotic *Lactobacillus casei* Shirota strain and pathogenic *Staphylococcus aureus*, *Salmonella* spp., and *Escherichia coli* after different incubation periods (3 and 6 hours). In this study, the ethanol content of Yomeishu was presumably removed on boiling. This was attempted to simulate the condition in which Yomeishu was used in cooking. The viabilities of the bacteria were determined by using total viable plate count method and expressed as log CFU/ml. Results showed that 0%, 10%, 20% and 40% (v/v) of boiled Yomeishu did not affect the growth of *L. casei* after incubated for 3 and 6 hours. Although there was some growth being observed between the two incubation periods, the changes were not significantly different ($P > 0.05$). 10% and 20% (v/v) of boiled Yomeishu significantly increased viability of *S. aureus* from 3 to 6 hours of incubation. The greater growth value of bacteria in 20% (v/v) of boiled Yomeishu indicated that it had greater promoting effect than 10% (v/v) of boiled Yomeishu. At the 6th hour of incubation, 10% and 40% (v/v) of boiled Yomeishu conferred inhibitory effect on growth of *S. aureus*. The inhibiting power of 40% (v/v) of boiled Yomeishu was greater than that of the 10% (v/v) of boiled Yomeishu. *Salmonella* showed significant increments in its viability between 3 and 6 hours of incubation in 10% and 20% (v/v) of boiled Yomeishu. There were obvious reductions in its growth in 40% (v/v) of boiled Yomeishu at both incubation periods. However, the inhibitory effect was not significant when tested with the Tukey's test. Among all bacteria, *E. coli* was the most sensitive one towards different concentrations of boiled Yomeishu. It was the only bacterium that possessed negative growth value (log CFU/ml) that indicated reduction or inhibition in growth. 40% (v/v) of boiled Yomeishu had the greatest inhibitory effect against *E. coli*. Nevertheless, the changes were again not significant ($P > 0.05$). Overall, 40% (v/v) of boiled Yomeishu seemed to have the strongest inhibitory power against all bacteria tested.

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