The Title The Study of Phage Type and Growth in Different Salt Concentration and pH Level of Staphylococcus aureus

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Date of graduation 13 January B.E. 2536 (1993)

ABSTRACT

The study of salt concentrations and pH influenced on the growth of Staphylococcus aureus isolated from plara and kapi samples from 51 raw food markets in Bangkok (November - December 1989). It was found that S. aureus was isolated from 10 of 102 (9.8 %) plara samples and 8 of 102 (7.8 %) kapi samples. The strains were non-typable group when tested with 23 phage sets. In addition, the detection of S. aureus in plara samples was significantly due to the concentrstion of NaCl and pH (P-value = 0.00019 and 0.003, respectively ; Fisher extract's test). The concentration of NaCl and pH of S. aureus positive plara-samples were significantly lower and higher than of negative samples, respectively (P-value < 0.05 ; t-test). In contrast, the detection of S. aureus in kapi samples was significantly due to the salt concentration and price in this study (P-value = 0.001 and 0.051, respectively ; Fisher extract's test). The salt concentrations and price of S. aureus positive kapi samples were significantly lower and higher than those of negative samples, respectively (P-value = 0.005 and 0.01 ; t-test)

The growth condition of S. aureus strains ATCC 13565, P18 and K1 isolated from plara and kapi samples were experimentally studied when each was inoculated in brain heart infusion (BHI) broth containing 5%, 8%, 10%, 12%, 15%, 20% and 25% NaCl, at pH 4, 5, 6, 7 and 8, in plara solution containing 7%, 10%, 12%, 16%, 21% and 23% NaCl at pH 5 and 5.8, and in kapi solution containing 7%, 10%, 12%, 16%, 20% and 24% NaCl at pH 7 for 2, 4, 6, 8, 10 and 15 days incubation. It was found that the growth of 3 strains in BHI broth, plara and kapi solution at various concentration of NaCl, pH, and times were not so quit different. The growth of 3 strains was inhibited in BHI broth with more than 12% NaCl at pH 4 and 5 for 8 days or more than 8 days incubation. The growth of 3 strains was inhibited in plara solution with 12% NaCl, at pH 5 and 5.8, for 6-15 days incubation as well as in kapi with 10% NaCl at pH 7 for more than 6 days incubation. Therefore, the growth of 3 strains in the media was significantly inhibited by the high salt concentration and low pH, high salt concentration and more days incubation in this study.