

Thesis Title	Evaluation of Microbial Food Safety and Survival of the Pathogens in Street Foods (Som Tum)
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### Abstract

Street foods are often the cause of food safety problems in Thailand, due to poor personal hygiene and sanitizing of ingredients that lead to cross contamination. In this study somtum, the popular street foods, is used as a model to be controlled by the risk based HACCP approach, the joint project with the Division of Food Sanitation, Department of Health, Ministry of Public Health (MOPH).

The 450 samples of somtum and the ingredients as well as vegetables that go with the dish were collected from venders around Bangkok areas. They were tested for some chemical properties, TPC, coliforms, *E.coli*, *Salmonella* spp., *S.aureus*, *Vibrio* spp. and *Clostridium* spp. As indicated in the microbiological standards issued by the Department of Medical Science, MOPH. It was found that most som tum samples had TPC  $10^4$ - $10^9$  cfu/g. that are higher than the standards with high percentages of 75, 60 and 85, respectively, for som tum thai , som tum poo and som tum pla-ra. The high frequencies of contamination of pathogens tested were also found in both som tum samples and their ingredients. This was mainly because of poor quality of ingredients and practises of the venders, which are the major sources of contamination. The ingredients had TPC  $10^5$ - $10^9$  cfu/g. Vegetables had coliforms of  $10^6$ - $10^9$  cfu/g. that are higher than the standards. *S.aureus* was found in som tum poo and salty crab ( $10^3$ - $10^4$  cfu/g.). *Clostridium* spp. was found high in fermented fish (  $10^4$  cfu/g.) at the frequency of 65 %. *Vibrio* spp. was found in salty crab and dried shrimp at percentages of 45 and 50, respectively. Som tum properties such as Aw, pH, %NaCl, % total sugar and citric acid were not sufficient to destroy

these organisms in a short period before serving. The major sensitive ingredients were salty crab, fermented fish, dried shrimp, papaya and vegetable. The TPC and number of pathogens in these ingredients were significantly reduced or destroyed by either adequate heating or washing. Steaming the salty crab for 3 min., boiling fermented fish to 68 °C, blanching dried shrimp in boiling water for least 1 min and washing papaya and vegetables with disinfectants before use were very effective methods. Moreover, good personal hygiene and washing/sanitizing played an important role in preventing cross contamination and safety of som tum.

**Keywords :** Som Tum / Street foods / Food safety