Sri Lanka Association for the Advancement of Science (SLAAS)
Proceedings of the 55th Annual Session, Part 1 – Abstracts.
29 November – 03 December, 1999. Colombo.

B – 10

Application of a HACCP plan for the evaluation of microbiological quality of cultured *Penaeus monodon* (Shrimp) at processing

K W S Ariyawansa and J M P K Jayasinghe

Institute of Post Harvest Technology, National Aquatic Resources Research and Development Agency, Crow Island, Mattakkkuliya, Colombo - 15

The hazard analysis and critical control point (HACCP) system is a management tool for food safety assurance. It can be applied at any stage in the food chain. HACCP permits a systematic approach to the identification and assessment of hazards and risks associated with the production.

This study was conducted to assess the hazards with respect to bacterial quality of cultured shrimp (*Penaeus monodon*) at shrimp processing factories from receipt to the final product to establish the level of bacteriological contamination during processing.

Farm shrimp samples were taken from seven processing factories from receipt to the final product at various points in the production line and analyzed for Total Bacterial Counts (TBC) as Colony Forming Units (CFU), total Coliforms, Sucrose fermenting and Sucrose non fermenting Vibrios, *Vibrio parahaemolyticus*, *Staphylococcus aureus*, *Salmonella*, *Vibrio cholerae*, and *E. coli*.

In addition, samples from chilled water bath, tap water and ice were analyzed for the same bacteriological parameters except for *Staphylococcus aureus*. At the point of receiving TBC of shrimps were high as 105-107/ g of CFU whereas frozen shrimps ready to export were having 105-106/ g of CFU. *Staphylococcus aureus* was observed only in one occasion at the point of receiving and in peeled shrimps at 102/ g of CFU.

Coliforms (including faecal coliforms and *E. coli*) were observed in many occasions but the number observed was not objectionable. Pathogenic bacteria such as *Salmonella*, *Vibrio cholerae*, *Vibrio parahaemolyticus* were not found in any of the samples.

Water and ice used, did not conform to the potable water quality. Hands of shrimp handlers were found free from *Staphylococcus aureus*. The concentration of residual chlorine in water varied from 0.03% to 1.5% and sodium meta-bisulphate from 30 ppm to 1000 ppm.