Development of a Hazard Analysis and Critical Control Point (HACCP) Plan for the Yoghurt Production Line at Milco Company (Pvt) Ltd, Digana

S. M. A. B. Samarasinghe[1], D. C. Mudannayake[1], A. M. N. L. Abesinghe[1], K. F. S. T. Silva' and K. E. Udayathilake[2]

[1]1.1va Wellassa University, Sri Lanka
[2]Milco Company (Pvt) Ltd, Digana, Sri Lanka

Hazard Analysis and Critical Control Point (HACCP) is a systematic, preventive approach that addresses biological, physical and chemical hazards throughout the food chain from the primary producer to consumer. The present study was aimed at developing a Hazard Analysis and Critical Control Point (HACCP) plan for the yoghurt production line at Milco Company (pvt) Ltd., Digana. Good Manufacturing Practices (GMP), Standard Sanitary Operating Procedures (SSOP) and Standard Operating Procedures (SOP) were developed and documented as pre-requisite programs for HACCP plan development. The product description, intended uses, flow diagrams and plant schematic diagrams were constructed. All potential hazards associated with each processing step beginning from raw material reception to transportation of end products and their control measures were identified. A risk assessment matrix was used to analyze the significance of the hazards. Then Critical Control Points (CCP's) were determined based on CCP decision tree. The CCP's of yoghurt processing line were identified as raw milk reception, chilled storage, milk pasteurization, and mix pasteurization. Then Critical Limits of identified CCP's were established using government regulations, company policies, proved scientific data with effective monitoring activities, corrective actions and verification procedures. During raw milk reception, hazard of toxin and pathogens present in raw milk was successfully controlled through the microbiological analysis of *Escherichia coil* and *Salmonella* spp. Biological hazards related to yoghurt were controlled by maintaining chiller and chilled milk storage at 0 - 4 °C temperatures. Chemical hazards associated with the yoghurt were controlled by supervision during product formulation and weighing. Critical limits estimated for milk pasteurization is maintenance at 72 °C temperature for 15 seconds and for mix pasteurization is maintenance at 80 °C temperature for 30 minutes. Finally a HACCP plan was developed based on the collected information.

Key words: Hazard, HACCP, GMP, SSOP, SOP, CCP.