DEVELOPMENT OF A HAZARD ANALYSIS AND CRITICAL CONTROL POINT (HACCP) PLAN FOR THE YOGHURT PRODUCTION LINE AT MILCO COMPANY (PVT) LTD, DIGANA

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By
SAMARASINGHE MUDIYANSELAGE AJITH BANDARA SAMARASINGHE

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Uva Wellassa University
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ABSTRACT

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 Study was aimed at Development of a Hazard Analysis and Critical Control Point (HACCP) Plan for the Yoghurt Production Line at MILCO (Pvt) Ltd. Digana, one of the major milk-processing companies in Sri Lanka. Good Manufacturing Practices (GMP), Standard Sanitary Operating Procedures (SSOP) and Standard Operating Procedures (SOP) were developed and documented as pre-requisite programs (PRP) for HACCP plan development. The product description, intended uses, flow diagrams and plant schematic diagram were constructed. All potential hazards associated with each processing step, beginning from raw material reception to transportation of end products were identified 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. 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 polices and proved scientific data with effective monitoring activities, corrective actions and verification procedures. During raw milk reception, hazard of toxin and pathogen presence in raw milk was successfully controlled through the microbiological analysis of *Escherichia coil* and *Salmonella* spp. Raw milk storage is needed to maintain at 6-10°C temperature and 0°C- 4°C temperatures for chiller and chilled milk storage respectively in'order to control the biological hazards related to Dairy products. Chemical hazards associated with the yoghurt were needed to be maintained during product formulation and supervision during weighing. Critical limits estimated for milk pasteurization were maintained at 72°C temperature for 15 seconds and mix pasteurization was maintained at 80°C temperature for 30 minutes. Finally, a HACCP plan was developed based on the collected information. Safety assurance can be obtained with higher consumer satisfaction through the effective implementation of developed HACCP plan into production process.