

DEVELOPMENT OF HAZARD ANALYSIS AND CRITICAL CONTRONL POINT (HACCP) PLAN FOR THE PRODUCTION LINE OF SET YOGHURT

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Hazard analysis and critical control point (HACCP) system is an internationally recognized systematic approach to identify and assess the hazards associated with food. The HACCP system can be applied throughout the food chain from primary production to the consumption, to identify the hazards and to ensure food safety. Hence, this study was focused on the development of HACCP plan for production line of set yoghurt at MILCO factory, Digana.

At first, Good Manufacturing Practices (GMP), Standard Operational Practices (SOP) and Standard Sanitation Operation Practices (SSOP) were assessed as existing prerequisite programs. The HACCP team was assembled and scope of the study was identified. The process flow diagram of set yoghurt and the factory lay out were constructed. After that, all potential biological, chemical and physical hazards associated with each processing step and ingredients were identified, analyzed and justified. Critical control points (CCP) were identified by using CCP decision tree. Finally, HACCP plan was developed.

Raw milk reception, continuous pasteurization, batch pasteurization, filling and sealing, incubation, cooling and storage were identified as critical control points. Antibiotic residues and pesticide residues in raw milk and full cream milk powder were identified as unaddressed hazards within the organization's activities. The critical limits to control the CCPs were identified as follows. The temperature of the receiving raw milk should be $<7^{\circ}\text{C}$ and free from adulterants. Temperature-time combination of continuous pasteurization should be 72°C for 15 seconds and 80°C for 30 minutes for batch pasteurization. Total bacterial count should be <10 per ml and coliform test should be negative in the yoghurt. The temperature of the incubator should be maintained at 44°C for $2\frac{1}{2}$ to $3\frac{1}{2}$ hrs and the temperature of cooling and

storage room should be maintained <5 °C. In any deviation, corrective action and verification procedures to be followed were indicated in the HACCP plan. Finally, it can be concluded that if the existing process of set yoghurt can be altered in accordance with the proposed plan, it is possible to accomplish the HACCP system in the production process of set yoghurt successfully.

Key words: Critical Control, Hazard Analysis, Yoghurt