THE APPLICATION OF THE FAILURE MODES AND EFFECTS ANALYSIS (FMEA) METHODOLOGY TO IMPROVE MEAT PRODUCTS QUALITY

Gabriela FRUNZĂ[1]

e-mail: frunza.gabriela@uaiasi.ro

Abstract

Failure Modes and Effects Analysis (FMEA) it is a predictive and preventive methodology specific to non-compliance and risk management. The FMEA is a modern tool used in the purpose of identifying potential failure modes, the causes and effects of each nonconformity (on a system, subsystem, or component part), for keeping under control the technological processes and to improve the quality of finished products. The aim of this study was the application of the FMEA to improve meat products quality (pasteurized and smoked salami). The FMEA methodology application is distinguished as specificity the Action Priority (AP) establishment depending on the severity (S) of consequences of manifestation of nonconformities to the consumer, on the probability of occurrence (O) of a potential hazard for food safety and on the probability of its detection (D). The AP was determined for each category of identified potential hazards: physical (P), chemical (C) and biological (B), for all ingredients and for all stages of the technological flow for meat products. Through AP, a quantitative assessment can be made of the potential food safety problems in a system, and respectively a prioritization of implementation of preventive actions and the lowering of potential nonconformities. Based on AP, the identified potential nonconformities can be classified in the Low priority category even if the old considered Risk Priority Number (RPN) value is higher than 100 (125, for the row material storage, at the level of P hazards). On the other hand, at values lower than 100 of the RPN, the AP can be in the Medium priority category (96, for the stage of cutting, deboning, choosing meat, at the level of C hazards), the value of S being the decisive element. After corrective action (CA) application, AP was lowered, the quality of the meat products being improved.

Key words: failure modes and effects analysis, quality, hazards, meat.