Food Safety Systems in a Small Dairy Factory: Implementation, Major Challenges, and Assessment of Systems' Performances

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ABSTRACT

The present study describes the implementation of a food safety system in a dairy processing plant located in the State of São Paulo, Brazil, and the challenges found during the process. In addition, microbiological indicators have been used to assess system's implementation performance. The steps involved in the implementation of a food safety system included a diagnosis of the prerequisites, implementation of the good manufacturing practices (GMPs), sanitation standard operating procedures (SSOPs), training of the food handlers, and hazard analysis and critical control point (HACCP). In the initial diagnosis, conformity with 70.7% (n=106) of the items analyzed was observed. A total of 12 critical control points (CCPs) were identified: (1) reception of the raw milk, (2) storage of the raw milk, (3 and 4) reception of the ingredients and packaging, (5) milk pasteurization, (6 and 7) fermentation and cooling, (8) addition of ingredients, (9) filling, (10) storage of the finished product, (11) dispatching of the product, and (12) sanitization of the equipment. After implementation of the food safety system, a significant reduction in the yeast and mold count was observed (p<0.05). The main difficulties encountered for the implementation of food safety system were related to the implementation of actions established in the flow chart and to the need for constant training/adherence of the workers to the system. Despite this, the implementation of the food safety system was shown to be challenging, but feasible to be reached by small-scale food industries.