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**TITLE:** Production-Distribution Planning in Perishable Food Supply Chains Considering Production Risks: An Application in A Dairy Products Firm.

## **ABSTRACT**

Continuity of healthy generations depends on that consumed food is safe and high quality. Food safety requires control and inspection in the source of the food. The duty of business is to ensure, determine and measure food safety risks, taking precautions by evaluating those risks, and keeping the munder controlor eliminating them completely.

In this study, a production and distribution plan has been made for a dairy firm by analyzing its food safety risk. The food safety risks which arise in production step have been analyzed by using fuzzy approach and fuzzy analytic hierarchy process, and the acquisition of overall risk ratio has been added on production and distribution model associating it with the production and stock cost. The model minimizing the total cost objective function which consists of production, stock, stockouts, distribution and food safety risk costs, has been obtained by using mixed integer programming method.

**KEYWORDS:** Food Safety, Risk, Planning, Optimization, Yoghurt.

