INTELLIGENT DECISION SUPPORT SYSTEM FOR CHOICE THE BEST FOOD STORAGE TECHNOLOGY

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Abstract

Storage processes are constantly being improved: new innovative handling and packaging equipment is being developed and applied; new product storage technologies, accounting, management, and telecommunication as well information technology innovations are being implemented. This change in opportunities has not escaped food storage processes either. The storage of food products is subject to higher requirements than other goods, therefore, considering the current trends in food storage, the choice of the appropriate food storage technology can be identified as a problem for the food companies. The choice of any technology is a sufficiently responsible decision for a business that requires objectivity, it depends on many conditions and situations. Therefore, the choice of food storage technology can be considered as a multi-criteria task, the solution of which would be clearly facilitated by the development of an intelligent decision support system. The aim of this paper is to propose a decision support system for food storage selection based on the application of the multi-criteria evaluation method - COmplex PRoportional ASsessment (COPRAS).

Summarizing scientific and professional literature for choosing the best food storage technology, we see it meaningful to choose the best food technology as a process. This is the precondition for the most appropriate disclosure of both the content of the selection and the chain of this multi-step process. So, we found that choosing the best food storage technology is the multicriteria task, therefore the use of the COPRAS multi-criteria evaluation method was the most suitable for achieving it. After systematizing the basic information about the process for choosing the best food storage technology developing an evaluation tool, an example of the choice of food storage technology based on real situations was provided in the 2 international food companies established in Kaunas (Lithuania).

The most important task solved was the selection of appropriate criteria for assessment. The COPRAS method for multicriteria evaluation for choosing technologies was recognized as the best. After performing an expert evaluation according to the criteria's and after multi-criteria evaluation calculations, the best food storage technologies were selected, which best meets the requirements for food companies according to the developed tool.

The multi-criteria method presented in the article and the identified evaluation criteria really could allow for the food companies to select the most appropriate technology for food storage. The proposed methodology can be applied to all food businesses, even for different forms of ownership and different activities.

Key words: Products storage processes, Multi-criteria evaluation, Copras.