

7th International Conference on
Industrial Engineering, Productivity and Quality



Using the design of experiments technique to improve the quality of oil cakes: a case study

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Abstract

Matching the quality of food products to the tastes of customers has become a challenging issue to attract more market share in today's competitive world. Experiments design method as one of the quality improvement methods identifies the most important factors affecting product quality and adjusts their optimal levels by performing experimental designs. In this study, first, two efficient factors on taste and quality were determined according to experts, and then the experiment was accomplished utilizing a two-factor design (without the presence of a blocking factor). The ratio of barley flour to wheat and sorbitol was each tested at 2 different levels, and after analysis, it was found that the best of the variable response is obtained at the high level of sorbitol and at the low level of barley flour. The procedure and results of the present research can be used as a guide and experience in study and development units of the country's food industry and play an effective role in responding to the needs of customers in this field in addition to improving the quality of the country's food industry.

Keywords

Food Processing, Design of Experiment, Factorial Designs, Sorbitol, Oil cake