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LINEAR PROGRAMMING METHOD APPLICATION IN OPTIMIZATION OF BAKERY PRODUCTS PRODUCTION

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Abstract. This paper is devoted to the question of determining the optimal production plan for an enterprise in terms of maximizing profits. The work was carried out by using a simplex method of solving problems, which is based on the linear programming theory. Based on the current scientific domestic and foreign publications analysis about the linear programming methods application effectiveness to solving the production optimization problem, it was revealed that simplex method is relevant for optimizing management decisions in various types of modern production. The search for the optimal solution was carried out by using practical information from the enterprise engaged in the bakery products production and sale in Samara megacity. The article describes a step-by-step algorithm for solving the optimization problem: the enterprise data analysis about food processing production plant; the problem solving method choosing and justification for the used method; constructing an optimization model; the obtaining the final optimal task plan. An optimal plan was drawn up in the paper with the existing limitations in the number of resources in the warehouse, in the number of produced products and the cost of each production unit. The expected profit will be the maximum at a fixed unit price. The obtained optimal plan was proposed to the analyzed enterprise.

Keywords: production plan; planning; linear programming; optimization method; simplex method.

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