MODELS OF OPTIMIZATION AND SIMULATION OF AGRICULTURAL CROP PLANS IN AGRICULTURAL HOLDINGS IN ROMANIA

George UNGUREANU[1], Carmen Luiza COSTULEANU[1], Elena LEONTE[1], Cătălin Răzvan VINTU[2], Bianca Antonela UNGUREANU[1]

e-mail: ungurgeo@uaiasi.ro

Abstract

The purpose of this paper is to promote the setting up of farms whose size will allow the practice of a viable, sustainable agriculture, capable to apply the newest technologies and lead to profit and efficiency, to the economical and organizational consolidation. The essential criterion in optimizing the crop structure is the economic efficiency, respectively the realized profit. Economic efficiency is constantly changing due to changes in raw material prices and commodity production. Hence the need to optimize the structure of crops in each cycle of agricultural production. The main indicators used in optimizing the structure of crops are: yield per hectare, production costs per unit area, profit per hectare, unit cost and rate of return. As a consequence, the resizing of the agricultural holdings, the partnership between the producers, the integration of the agricultural production, the rural development, the consumers' constant request for agricultural and food products, the decrease of the deficit of the commercial balance for the agricultural products, the increase of the population's life standard, the safety of the food, all these are goals that have to be under the continuous attention of the authorities at central and local level. The elaboration of mathematical models was oriented on the design of several structural alternatives and the elaboration of a large number of variants, because analysing the problem of establishing an optimal structure through the prism of several variants creates the possibility of highlighting the development and manifestation of different phenomena, some conclusions, not by subjective assessments or by antithesis, but on the basis of several concrete structures that each variant covers.

Keywords: Models of planning, economic, production, simulation, decision