## DECISION DEVELOPMENT OF MANAGEMENT PROBLEMS OF BIOTECHNOLOGICAL SYSTEMS AT AN UNCERTAINTY OF ENVIRONMENTAL STATES USING THE MATHEMATICAL STATISTICS METHODS

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## **ABSTRACT**

The methods for formalizing management problems based on the uncertainty of initial information and situation are developed in the paper. An assumption is made and accepted that the theory of decision-making under conditions of uncertainty be considered as a theory of rationalization of decision making taking into account the elements of uncertainty of environmental conditions, and its methods - as the methods of constructing a rational choice function under conditions of uncertainty. For an optimal strategy, control is calculated first, starting from the last level, and then the control process is carried out, starting from the first level. With this in view, any decision-making procedure, except for the one introduced by the levels, gives a lower score, partially proper optimal one, but not lower than locally optimal. It means that any decision-making procedure, except for the one introduced by the levels, gives a lower rating, partially proper, but not lower than locally optimal. The management processes of a biotechnological system (BTS) almost always occur in conditions of uncertainty due to the lack of information necessary for management. Therefore, it is advisable to consider the management process as a decision-making process in conditions of uncertainty.

**Keywords:** Formalization methods, conditions of uncertainty of initial information, management problems, rationalization of decision making, construction of a rational decision choice function.