

USING MATHEMATICAL METHODS PLANNING FOR SELECTION OPTIMAL COMPOSITIONS POLYMER SHELL TABLETS

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Introduction. The perspective directions of the domestic national Pharmaceutical industry is the development and implementation of new industrial production dosage forms, which will be added to the range of domestically produced remedies, for its efficiency and quality not inferior foreign analogues.

At the present stage of pharmaceutical industry development is the best level of pharmaceutical workers for using the informational technology ensures the implementation of mathematical planning experiment in scientific research. Because of intensification research, the success of research and experimental work in pharmacy is based on the use age of mathematical planning scientific research in the field of new pharmacologically active substances synthesis as well as the development of optimal composition, technology dosage forms optimize quality control, conducting biopharmaceutical research.

Aim. Explore the use of mathematical methods planning for selection optimal compositions polymer shell tablets.

Materials and methods. The scientists-pharmacists use method of mathematical planning multifactor experiment for solving the optimization problem structure dyes and pigments in the dragee shell of tablets. This technique experimental design is the best method of solving the problem optimization shell color with a minimum number of experiments.

Creating a new drug or new dosage form is a complex multistage process in experimental studies that may include long stage requires the use of mathematical method planning. Thus, for the development and implementation of new solid dosage forms in industrial environments using different group subsidiary substances for shell tablets: film forming agents, pigments, dyes, plasticizers, stabilizers, etc. In this studies the impact of many qualitative factors on the structure and properties of the polymer film plans using analysis of variance.

Results and discussion. Using this method, we can divide the total sum of observations squares on components that get due to the influence of various factors and their interaction. Since the tablet-core having a hydrophobic surface and photosensitive properties to the selection film forming agents be aware that the film has high adhesion to the surface and core tablets were protected from light. Therefore, in film forming agents qualities necessary to use different polymers: hypromellose, methylcellulose and polyvinyl alcohol. In addition, improving light protective properties of the film also introduced shell white substrate based polymer similar to that using a color coating. The scientists studied the amount coating on the tablet surface, as well as value white substrate and colored coating for optimal selection of the best value part to mask the surface of the tablet-core of UV exposure radiation.

Conclusion. Thus, the creation of a medicinal product is complex multi-stage process of experimental research. To optimize the development of composition and technology of drugs in laboratory conditions industrial pharmacy it is necessary to use the most effective methods of math's planning experiment. In particular, for the purpose of rational composition coating excipients tablet cores selection it is used the method of math's planning experiment – three-factor analysis of variance on the Latin square basis.