

## BOOK REVIEWS

A. S. Ginzburg

### FUNDAMENTALS AND PROBLEMS OF THE OPTIMIZATION OF THE TECHNOLOGY OF DRYING FOOD PRODUCTS\*

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The second book of a two-volume textbook of Prof. A. S. Ginzburg is a logical extension of the monograph "Principles of the Theory and Technology of the Drying of Food Products" which was published earlier, and it is devoted to the fundamentals of the technology of drying a whole series of characteristic classes of food products.

The book consists of eight chapters and an appendix.

The questions connected with the main principles and problems of drying technology and with the method of establishing the optimum conditions of the drying process and the choice of a rational construction for a drying installation are discussed in the first chapter. Having defined the subject of drying technology, the author states the modern concepts concerning food products as drying subjects and dwells in detail on such important indices of these products as the structural-mechanical properties and their variation during the drying process. In doing this the author pays great attention to a deep analysis of the molecular mechanism of the complex set of events (physical, physicochemical, biological) which develop in the product itself during the drying process.

In this chapter it is convincingly shown that knowledge of the properties of the materials being dried and the laws of their variation under the action of various factors lies at the foundation of the method of establishing a rational means and the optimum conditions of drying, on which the choice of the construction of the drying installation is based in turn. The material presented in the section "Ways of increasing the efficiency of the process of drying food products" of this chapter has great theoretical and applied value.

Chapters II-VIII are devoted to questions of the theory, technology, and engineering of the drying of a whole series of widely distributed food products (cereals, bread, macaroni products, baking yeasts, sugar, marmalade, pastilles), each of which is a typical representative of a whole class of materials which are similar in their drying properties. We should mention the very successful, in our view, methodological construction of these chapters, in which questions of the drying of individual food products are discussed in the following order:

- a) a characterization of the product as a drying subject;
- b) the principal experimental laws of the drying process;
- c) the mechanism of the drying process;
- d) the rational method of drying and well-founded drying conditions;
- e) the means of drying and the construction of the drying installations which are employed;
- f) the problems of the development of the drying technology for the given product.

Such a complex systematic presentation of the generalized data on the drying of various materials promotes a fuller acquaintance with the basic principles of the analysis of this process, starting from the general aspects of drying technology, and with the modern approach to the development of the optimum technology for the drying of food products with allowance for their specific properties.

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\*Technology of the Drying of Food Products, Pishchevaya Promyshlennost', Moscow (1976), 248 pp.

Great interest is provoked by the suggestion expressed in the concluding section concerning the use of the molecular-kinetic method of analysis of the process of drying of moist materials, including food products, and concerning the further development of the thermodynamic method of the investigation and calculation of the process.

The systems presented in the appendix for the well-founded choice of drying installations for various materials are of positive practical value.

On the whole, the material in the book is presented at a high theoretical level, in logical sequence, and well illustrated by figures and graphs.

A. S. Ginzburg's book can be used successfully in the training of engineers for the food industry and is of great interest for specialists occupied with problems of the drying and thermal treatment of moist materials.