

Review

Foreign Substances in Food

by L. Rosíval, A. Szokolay et al. 2nd revised and supplemented edition. Martin, Osveta 1983, 644 pages, price 61.— Kčs.

In the last decade special attention has been paid to the problems of foreign substances in food all over the world. It is well documented also by the recently edited important monograph written by the authors named above. In the monograph hundreds of references to the Czechoslovak and foreign scientific literature are summarized — it is already the fourth revised and supplemented edition. The first Slovak edition appeared in 1969, in 1978 it was translated into German, in 1982 into Russian. The fourteen authors of the monograph complexly, systematically elaborated a great deal of knowledge on foreign substances in food. Extra valuable is also the fact, that all these authors are prominent scientists who have been working in this field with their teams for a long time. In this way they could make use of their own new findings and consider the references from literature with a clear view, using the method of critical analysis and synthesis. The monograph has not a static but a dynamic character. Not making conclusions of the knowledge gained hitherto it makes us face new unsolved problems and stimulates the reader to further studies and experimental research in this field. It does not solely reflect the present state of world-wide knowledge concerning the foreign substances in food, but it also is an active agent of the further progress in this sphere of human knowledge.

The monograph consists of seven chapters of various length. The 5th and 6th chapters are the longest, they take about 80% of the whole text.

In the first chapter the authors define a concept of foreign substances in food in contrast to natural components of food; they distinguish the specific food additives, contaminants, and the residues of pesticides and biologically active substances. The authors specify the aims in relation to the development of food production in the modern civilization, that are followed in industrial food production with regard to the potential hazard to the consumer's health. The authors point out the necessity of dealing with these problems complexly with the ecological questions.

In the second chapter the authors classify the foreign substances in food

according to their origin, taking into account various conceptions. The original Czechoslovak conception distinguishes five main groups of foreign substances in food; the latest conception distinguishes intentionally added substances and substances unintentionally present in food. These substances are subdivided into twelve different groups.

In the third chapter the authors explain the ecologic relationship of chemical substances in the abiotic environment, and their entrance into the biological environment as well as into human organism. They graphically present the relationships between the ecosystem and from the point of view of the human activity in production and economy. They demonstrate the movement of pesticides in the biosphere and in the biological systems in a very objective and convincing manner, as well as the movement of the toxic elements through the geocycle into the human and animal organisms.

In the fourth chapter the authors deal with the choice and evaluation of the foreign substances' criteria from the point of view of health protection. They define the factors that have a decisive influence on the biological action of chemicals, and analyse acute, subchronic and chronic toxic effects of these substances. They also pay a special attention to the carcinogenic effects of foreign substances, evaluation of their carcinogenic hazard, and also to a prospective prevention. The information about the teratogenic and mutagenic effects of foreign substances in food is also very important.

In the fifth chapter, taking more than one half of the monograph, the authors give a detailed survey to the problems of a large number of contaminating foreign substances. The most detailed part is devoted to pesticides, i.e. substances contaminating the food when applied to plants, and also to substances applied in animal husbandry. Hygienic and toxicological problems concerning mycotoxins, plastics and radiation treatment of food are dealt with a great concern.

In the sixth chapter the authors deal in detail with the problem of additives, i.e. substances added to food to improve its appearance, texture, flavour, biological value, or to prolong its shelflife, or to facilitate its processing in industrial production. Specialists in food industry can find here a clear information on the hygienic and toxicological aspects of using these additives as well as on hygienic measures concerning their application both in our country and all over the world.

In the seventh chapter the authors deal with the problem of endogenous foreign substances in food with a special regard to the products of oxidation of fats, especially aimed at products of non-enzymatic discolouration of food (Maillard's reaction), nitroamines, biogenic amines, bitter substances, and the products originated from an interaction of a foodstuff and an exogenous, foreign substance.

At the end of the monograph there are summaries in Russian, German and English.

Having written this monograph, its authors have made a praiseworthy work of a great social importance. It gives a complex and stimulating survey of problems dealing with foreign substances in food and will surely be available aid to all interested scientists, pedagogues and managers.

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