

THE MICROBIOLOGY OF JUICY VEGETABLE RAW MATERIALS AND SOME PRODUCTS OF ITS PROCESSING

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The Codex Alimentarius commission has developed the safety-control measures of food products, including biological safety according to the document CAC/GL 69. The biological danger, being of the first priority on the risk scale, is caused by the microorganisms, helminthes and insects.

The causes of growing danger level of biological nature are the following: a modern fashion for consumption of raw or underdone meals, the increase of the daily consumption of improperly prepared animal origin products, the expansion of international trade leading to new types of food raw materials, and modification of microorganisms. Therefore both the nomenclature of microorganisms subject to the special control and requirements for the control severity are periodically changed.

The contaminants of fruit and vegetable products are presented typical and casual types of microorganisms coming from environment, equipment, workers' hands and clothes; carried by birds, rodents, and insects. But the basic source of contamination of juicy vegetable raw materials is soil.

Fruit and berries spoiling can be caused by the mould fungi, yeast and some bacteria (*Erwinia carotovora*, *Pseudomonas marginalis* and others), but their effect is inhibited by a high fruit acidity. The vegetable spoiling can be caused by bacteria of the *Bacillus*, *Lactobacillus*, *Micrococcus*, *Alcaligenes* genera and moulds (*Penicillium*, *Fusarium*, *Alternaria*, *Botrytis*, *Sclerotinia*, etc). A surface of cucumbers, tomatoes, leaf vegetables is the area of dwelling of lactobacilli. On the vegetables surface, especially that of root and tuber crops, there is a large number of soil microorganisms, including spore-forming bacteria of the *Bacillus* and *Clostridium* genera. The probability of discovery of hazardous to people's health *Clostridium perfringens* on the leaves of green plants, horse-radish makes up to 61%, on a carrot, onion, garlic and other green-stuffs – up to 34 %.

In experimental studies aerobic spore-forming bacteria were isolated from 47 of the most popular low acid vegetable cans: assortment and sauces. The determination of the properties of these microorganisms can refer them to the *Subtilis* – *Licheniformis* group, which includes the dominant raw material contaminants. *B. cereus*, one of the agents of the food poisonings, was found out in 6,2 % test samples of fruit, 33 % tests of carrot, 24 % tests of onion, to 9,5 % tests of the canned products.

So, the determination of qualitative composition of vegetable raw material microorganisms allows judging about possibility of epidemiology danger and high quality of products.