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14. USE OF GLYCINE IN FOOD PRODUCTS

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When assessing the quality of food products, special attention is paid to their taste and aroma. Nutrition physiology considers taste and flavoring substances as important components of food that improve digestion by activating the secretion of digestive glands and contribute to the health improvement of intestinal microflora.

The taste and aroma of food products are the result of many factors, the main ones being the following:

- flavoring and aromatic components in the composition of raw materials;
- addition of flavoring substances to the food products in the technological process, in particular: table salt, spices, food acids, enhancers of taste and aroma, sweeteners, essential oils, flavorings, etc;
- substances formed in the technological process due to various chemical, biochemical and microbiological changes occurring during the production of food under the influence of various factors.

Glucose and glycine, as reactive precursors of the Maillard reaction, are important for the generation of flavor in many cooked foods [1]. Glycine and its sodium salt enhance the taste and aroma of natural products. Glycine (aminoacetic acid) is one of twenty amino acids and a part of many proteins (fibrous, in particular) that participates in the biosynthesis of glutathione, serine, choline, purine bases and creatine. It is a naturally occurring amino acid found in many natural proteins, the synthetic form of which is used as a food supplement E640. The compound is also known as aminoacetic acid, glycol. Glycine is a crystal that is highly soluble in water and insoluble in alcohol.

Glycine is found in protein molecules much more often than other amino acids and has important biological functions. The body of a healthy person independently synthesizes amino acids in the required quantities. Aminoacetic acid is found in animal products (such as beef liver), nuts, and some fruits. As part of the food additive E640, glycine and its salts, when consumed within the normal range, do not have a harmful effect on the human body.

The flavor enhancer E640 is used in food technology in most countries of the world. The additive is included in the list of officially approved for use in the food industry of the European Union, the USA and Canada within the limits of permissible norms regulated by the Sanitary Rules and Norms.

In the food industry, E640 is added to fruit juices, jams, vegetable purees, table salt with improved biological properties. Glycine is used as an optimizer for the taste and odor of some beverages, mostly alcoholic. The flavor enhancer E640 is added to some types of products as a carrier of useful substances. Certain compounds and complexes, such as glycine and ferrous sulfate, are involved in the enrichment of salt with iron ions, and calcium and glycine compounds are used for calcium enrichment of beverages. In addition to the food industry, glycine is widely used for peptide synthesis; when mixed with some other amino acids, it is used for parenteral nutrition. Isolation of amino acids from natural proteins is a long and expensive process; it is not advisable to implement it on an industrial scale. Glycine is obtained by organic synthesis from acetic acid, then subjected to thorough purification.

As a substance that inhibits the activity of *E. coli*, the additive E-640 is used in the production of meat products [2].

References

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