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COMPOUNDS THAT DETERMINE THEIR NUTRITIONAL VALUE BASED ON THE TYPES OF FOOD PRODUCTS

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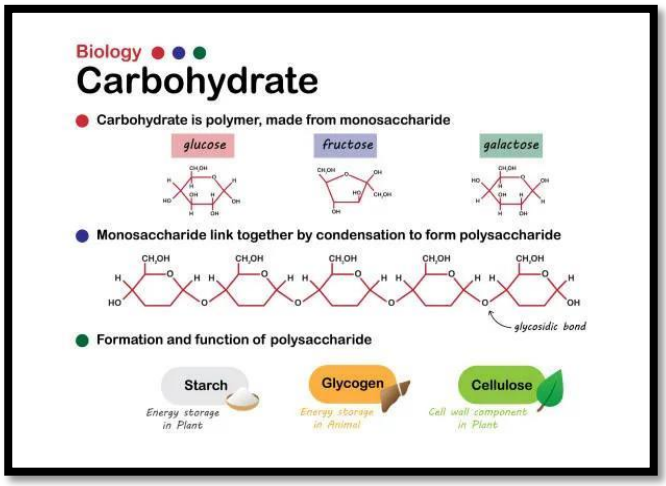
Abstract: Today, consumers are interested in the general composition of almost all types of manufactured products, and the number of products included in the product is increasing day by day. In this article, the general composition of food products, its energy-giving compounds, biological additives (preservatives, flavoring agents, coloring agents, flavor enhancers), proteins, fats, and carbohydrates are more detailedilluminates.

Keywords: enzyme, energy, peptides, catalyst, breakdown, aromatizer, preservative, protein, trace element.

Introduction. Energy value is a complex of substances that determine the biological and energy value of a product. The nutritional value of products is characterized by their quality (harmlessness), the proportion of the mass of nutritious and biologically active substances with digestibility, organoleptic and physiological values. Currently, the food production industry is a fundamentally developed field, and the number of types of products and industrial enterprises is increasing significantly. At the same time, it requires sufficient qualified analysis from experts in this field. As well as knowledge of the content of each manufactured product, as well as the normative indicators of compliance with the rules of use, quality requirements, restriction from the consumer network in cases of violation of sanitary epidemic conditions, and taking measures.

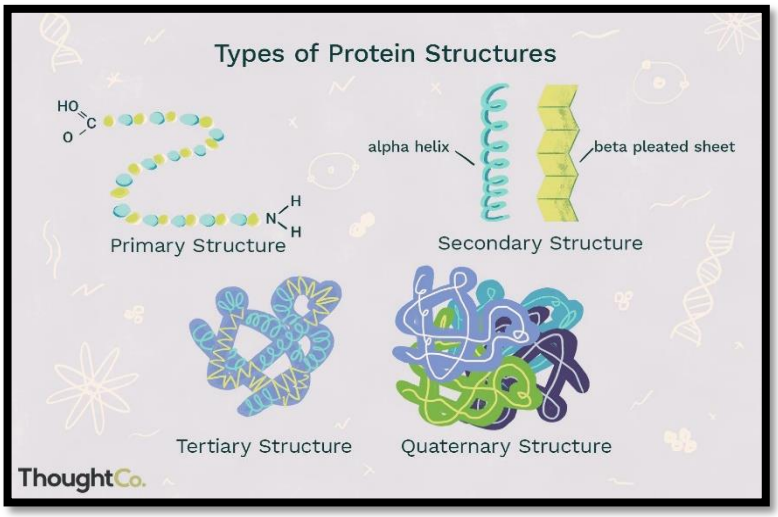
Materials and methods. Food products include water, mineral substances, carbohydrates, nitrogenous substances, lipids, enzymes, vitamins, organic acids, flavoring, coloring and flavoring substances, phytoncides, etc. The chemical composition of food products is divided into 2 groups we must be, i.e. basic and additional compounds.the basic composition includes carbohydrates, fats, proteins and many macroelements, and they serve as the basis of the composition of almost all products as a source of energy. As for the second component, we can give an example of various compounds used depending on the type of product production (enzymes, organic acids, additives, coloring agents, additional flavoring agents)



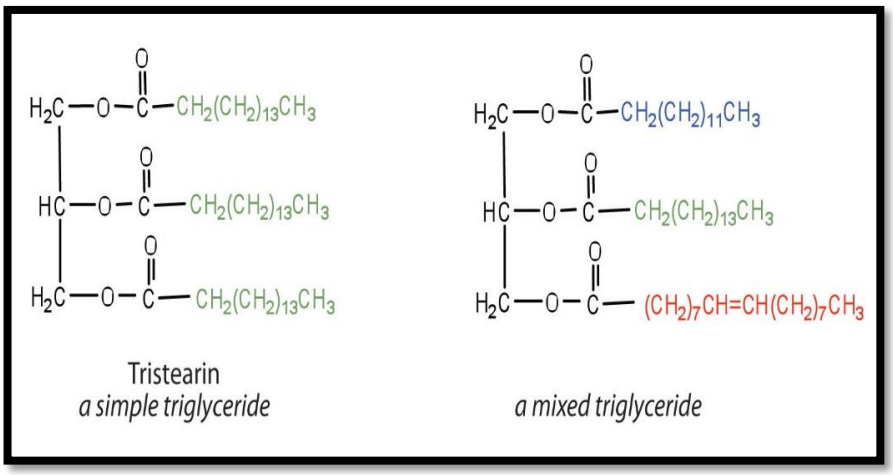
Carbohydrates: Depending on the type of product, carbohydrates are considered the main component of confectionery products, bread products, porridges, condensed products, juices, and different representatives of the carbohydrate group are found in each product. Carbohydrates are one of the most necessary organic substances for human life. Carbohydrates make up about 70% of food consumed by humans. Carbohydrates are the main source of energy, that is, more than half of the energy for the body is accounted for by carbohydrates. The daily need for carbohydrates is 500-600 grams. 1 gram of carbon provides 17.6 kJ (kilo Joules) of energy when completely digested. Carbohydrates are not only a source of energy, they also take part in the formation of compounds that play an important role in vital processes in the body, that is, proteins, fats. Carbohydrates found in food products are divided into two groups according to their structure and properties. The first group includes simple carbohydrates, that is, monosaccharides, and the second group includes complex carbohydrates, polysaccharides, in turn, polysaccharides form two subgroups. These include low molecular weight oligosaccharides and true polysaccharides composed of a large number of monosaccharides. Carbohydrates are mainly found in plant products. Monosaccharides include glucose, fructose, galactose, as well as sorbitol and sorbitol, which are used for medicinal (dietary) purposes. Xylitol with sorbitol is recommended for people with poor functioning of the pancreas, as it does not increase the amount of sugar in the blood and does not require insulin for its absorption.

Proteins. playing an important role in the life of living organisms, they are the main component of nerve, blood, and brain tissue. Proteins differ from other organic substances in that they contain nitrogen. Proteins are another name for proteins. Protein is derived from the Greek word “protas”, which means the first, the most important, the most important. They provide the body with a large amount of energy, 1 gram of protein molecule disintegrates in the presence of oxygen and releases 4.1 kcal or 17.6 kj of energy. Plant and animal proteins are divided into 3 groups.

- water-soluble proteins;
- insoluble proteins;
- complex proteins – proteids.



Soluble proteins include albumins, globulins, prolamins, glutelins, protamines, and histones. Albumins contain sulfur and are soluble in clean water, saline solution, and acids at 1°C. 0 is found in plant and animal raw materials. Globulins do not dissolve in pure water, but dissolve in a weak solution of neutral salt (5-15%). It precipitates in a solution of high concentration, it is more common in plant proteins. Like albumins, it undergoes good denaturation during heating and mechanical processing



Fats: - are organic compounds insoluble in water in the products. Lipids are well soluble in organic solvents such as chloroform, acetone, gasoline, alcohol, and toluene. Lipids are composed of the following main elements. Glycolipids include C, H, O, and in some cases P and N. Lipids are divided into fats, waxes, phosphotides, and glycolipids depending on their chemical composition and structurefats and oils take part in plastic processes in the human body and are considered the main source of energy. As a result of the breakdown of 1g of fat, they have the ability to provide 9.3 kcal or 38.7 kj of energy. They contain a number of biologically active substances (vitamins (A, D, E, K), phospholipids, sterols) in dissolved formit is also important in nutrition.food organic acids. Food organic acids are widely used to give sour taste characteristic of fruits and berries to many confectionery products. Examples of food organic acids are lemon, wine, apple, milk, acetic acid. Among them, citric, lactic and acetic acids are used more often.

Food coloring. The color of the product is one of the factors determining its attractiveness. Therefore, the coloring of food products with natural dyes appeared before. Coloring is also necessary because most food products lose their previous color during technological processing. Food dyes used in the food industry can be divided into two groups: mainly natural dyes obtained from plants, synthetic dyes with high coloring ability obtained by organic synthesis.

Flavoring agents. Various flavoring agents are used to ensure the pleasant smell of bread and confectionery products. They include spices, vanillin, aromatic essences. Spices are herbal products with a unique taste and aroma due to the presence of essential oils, alkaloids and glucosides. The use of spices not only improves the taste of food, but also increases its digestibility in the body. Spices catalyze most of the enzymatic processes in the body and also have bactericidal properties. More than 150 types of spices are known, of which only about 20 types are common. As spices, mainly dried parts of plants: fruits (fennel, cumin, coriander), seeds (nutmeg), flowers and their parts (peppercorn, saffron), bark (cinnamon) is used.

Vitamins. Although they do not play a significant role in meeting the human body's energy needs, are very necessary for the body. The lack of vitamins in the consumed food products causes the body's metabolism to go wrong, its normal vital activity is disrupted, as a result, a person suffers from a disease called avitaminosis. Most vitamins combine with proteins in the body, form enzymes and regulate the metabolic process. .if the body is not sufficiently supplied with vitamins, enzymes will not be formed, as a result, the reactions that these enzymes strengthen will stop, and the derailment of one of the reactions will have a negative effect on other processes that take place in the body, all thisThis is the consequence of avitaminosis, which causes dysfunction of many organs. Enzymes are protein molecules tha" interact with various substances and accelerate their chemical changes in a certain way. In this case, they are not consumed. In each enzyme, an active center is added to the nutrient medium. And employ this or that chemical exposureIt has a reducing catalytic part. These substances accelerate biochemical reactions in the body without raising the temperature.

The main characteristics of enzymes:

1. specificity: the enzyme's ability to act only on a specific nutrient environment, for example, on lipases-fats;
2. catalytic efficiency: the ability of enzymatic proteins to accelerate biological reactions by a hundred and a thousand times;
3. regulatory ability: the production and activity of enzymes in each cell is determined by a specific chain of changes that affect the resynthesis of proteins.

Results. For tinted apple juice. Without preservatives. Sterilized. For children over 3 years old. The fruit part is 100%. Ingredients: condensed apple juice, acid regulator (citric acid), water. Nutritional value of 100 g of product: Carbohydrates: 9.1 g. Vitamins (mg): C 2.0; B1 – 0.01; B2 _0.01; PP 0.1. Energy value – 38 kcal (159 kj). If the density of 1 liter of product is 0.98 g/m3, it has a total energy yield of 373 kcal.

These indicators may vary depending on the conditions and varieties, within the limits typical for natural raw materials. Keep the air temperature from 0°C to +25°C and relative humidity up to 75%. The product in the opened box can be stored for up to 24 hours at a temperature of +2°C to +6°C. The production date and expiration date are indicated on the box. Made in Uzbekistan.

Conclusions and recommendations. In conclusion, the energy value of almost all types of food products is mainly 3 types of compounds; It corresponded to the contribution of the total energy generated from the structural breakdown of the molecules of proteins, fats, carbohydrates. And the additives used in addition to this are considered to give energy, depending on the composition of the structure, knowing their contribution to the composition of the product. For example, the value is calculated depending on the amount of fat (some vitamins), protein (enzymes, hormones, vitamins), carbohydrate derivatives (colorants). For example, if 15 g of coloring substances are added to the product, it is considered as 4.1 kcal as carbohydrates.

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